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ABSTRACT

The study described in this report was conducted to identify the barriers and facilitators to establishing a system of linkages between vocational education and apprenticeship programs. Following an extensive review of literature that showed various barriers to linkages and described some facilitating steps, data were collected through an initial open-ended interview and later through a structured questionnaire that was developed from the responses given to interview items. Forty-six people in vocational education and apprenticeship administration were interviewed, and the resultant survey was mailed to a sample of 288 persons--vocational education personnel and administrators, apprenticeship administrators, and apprenticeship instructors. A total of 106 surveys (38 percent) were returned. The results of the questionnaire contributed information regarding priorities for effecting successful linkage arrangements and suggested efficient, effective, and attainable mechanisms for addressing potential sources of conflict. Some of the barriers cited by respondents were (1) existing organizational practices and procedures, (2) lack of domain consensus, (3) personnel attitudes and perceptions, and (4) lack of communication and awareness. Steps to address these barriers were suggested by respondents. Their ideas are summarized in a manual on implementation of linkages between vocational education and apprenticeships that was produced by this project. (KC)

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FINAL REPORT

August 1983

Project No. STAR 82-040

LINKAGE BETWEEN VOCATIONALLY TRAINED PARTICIPANTS AND INDUSTRY REGISTERED APPRENTICESHIP PROGRAMS: A STUDY OF BARRIERS AND FACILITATORS

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Introduction

Current political and economic trends have recently produced calls for greater conservation of financial resources and the trimming of budgetary allocations among many governmental agencies. A major development in response to this situation has been the recognition given, on the part of policymakers, to the need for greater effectiveness and coordination in the delivery of service programs. As a result, recent public legislation has been enacted which provides for the mandated collaboration of certain agencies in meeting common goals and avoiding the duplication of services.

Despite these legislative efforts, however, there is growing recognition that the problems of implementation may be with us indefinitely. An HEW National Coordination Study (Goodisman and Groenenberg, 1978) produced findings which indicated that federally-mandated coordination had very little effect on actual coordination activities. The problems specified were due primarily to a lack of specificity regarding the functional needs and requirements of coordinating agencies and a lack of definite provisions for follow-up and evaluation.

The literature also describes an alternate form of linkage which is based on voluntary association and is characterized by the absence of a prescribed system of management rules (Esterline, 1976). Although voluntary linkage has also been referred to as "unmanaged" coordination (Esterline, 1976), the term should not be interpreted as an absence of planned activities. Studies of this form of linkage activity have

produced descriptions of relevant facilitators to successful collaborative arrangements. Among these facilitative characteristics are: (1) the mutual understanding and awareness of relevant needs, resources, and objectives of each participant to the linkage relationship (Litwak and Hylton, 1962 ; Esterline, 1976; Levine and White, 1960; Maurice, 1981); (2) the possession of relevant organizational properties such as stability in formal structures and networks combined with flexibility and efficiency in the accomplishment of specified goals (Mojkowski and Gross, 1977); (3) effective leadership (Aiken and Hage, 1968); (4) systematic communication and information sharing (Pasmore, et al., 1978), including the maintenance of formal information networks (Louis and Sieber, 1979); and (5) greater attention to planning concerns and the development of specific procedural guidelines (Tindall, 1980).

In addition to the identification of various facilitative characteristics, numerous barriers to linkage have also been anticipated. These include: (1) budgetary allowances, funding and other cost factors (Rinehart, 1982); (2) organizational procedures, including corporate and institutional policies and practices (Rinehart, 1982; Starr, et al., 1980); (3) legal, semantic and interpersonal barriers (Rinehart, 1982); (4) long-range planning considerations which may conflict with immediate linkage goals (Starr, et al., 1980); and (5) the actual preparation and implementation of procedural guidelines for establishing linkages (Mojkowski & Gross, 1977; Crandall, 1977; Hall & Hord, 1977).

Statement of the Problem

The purpose of the present study is to identify the barriers and facilitators to establishing a system of linkages between vocational education and apprenticeship programs. Although recent legislation has

been passed which specifies the relative jurisdiction of various administrative agencies regarding the development of pre-apprenticeship programs and uniform minimum standards in both vocational education and registered apprenticeship programs (Florida Statutes, Chapter 446.011, 1982), the actual implementation of linkage activities are based primarily on voluntary forms of cooperation. In view of this fact, it is imperative that reliable information concerning the optimization of linkage efforts be made available to agencies involved in collaborative relationships. Without a clear understanding of potential barriers and facilitators to a given linkage, the probability of successfully implementing and establishing relevant collaborative activities is significantly diminished (Starr, et al., 1980; Proceedings of the Dissemination Processes Seminar, NWREL, 1980).

According to a report by Starr, et al., 1980, the probability of achieving successful linkage increases significantly when all parties to the arrangement systematically pursue the following lines of activity: (1) objectively evaluate their capacity for initially entering into a cooperative relationship; (2) recognize potential barriers which may impede cooperation; and (3) define some of the facilitative characteristics which can promote linkage. Given the nature of the exchange process and the potentially large number of problems which could hinder the efficiency and effectiveness of a cooperative relationship, the identification of potential barriers and facilitators becomes a critical consideration in the allocation of energy and resources.

The present study has been designed to examine the relevance of a set of factors which findings from a series of previously administered unstructured interviews with vocational education and apprenticeship

program personnel indicated were likely to affect the development and maintenance of linkages. The following issues were examined in light of their potential for inhibiting and/or facilitating the linkage process:

- organizational characteristics of the two programs;
- the nature of the process for selecting registered apprenticeships; the selection standards and screening processes used for vocational education students;
- the nature and quality of instruction in vocational education;
- specific personnel in vocational education and apprenticeship programs (such as guidance counselors, occupational specialists, educational directors);
- the granting of advanced credit in apprenticeship programs for training received in vocational education;
- the level of awareness and understanding between apprenticeship programs and vocational education, as well as between industry and vocational education;
- the nature and quality of communication both within and between agencies; and
- the administrative relationship between registered apprenticeship programs and vocational education.

Significance of the Study

Effective and efficient designs for linkage must take into account the complex and sometimes hidden problems which may emerge during the course of an exchange of resources and activities between agencies (Tindall, 1980). In this context, an attempt to identify potential barriers and facilitators to linkage between vocational education and apprenticeship programs takes on greater importance due to the historical lack of communication and cooperation between the two programs. Glover (1980) has observed that apprenticeship programs are often among the least understood systems of training in the United States. Apprenticeship sponsors have had a history of strong commitment to the essentially private character of the system and have thereby tended to resist any form of government or outside intervention. An exclusionary policy has also tended to characterize the acitivites of vocational education programs in the past, resulting in diminished awareness and communication between these programs and the industrial sector (Glover, 1980).

Given the historical lack of awareness, communication and exchange between vocational education and apprenticeship programs, there is a vital need for an examination of these issues. Currently, a heavy emphasis is being placed on voluntary linkage efforts in the provision of vocational and industrial training. The possibilities and problems associated with such an effort are explored here through a survey of vocational education and apprenticeship personnel.

Review of Literature

In preparing a context within which the present study could be situated, several theoretical models were examined in the literature. The justification for this course of action was highlighted in Banathy and Duwe's (1978) survey of linkage practices and indicators of successful coordination among organizations. It was found that, in general, the application of linkage policies tended to be based primarily on trial-and-error methods with a significant neglect of available information and knowledge obtained from research in the area of interagency coordination. Others have also indicated that a comprehensive theory of interorganizational relations could facilitate the understanding of linkage processes and substantially enhance the development of applicable working models in this area (Levine and White, 1960; Litwak and Hylton, 1962).

Although it is not the purpose of this report to systematically build and test a comprehensive theory of interorganizational relations, a brief survey will be made of some major trends in this area. The present review of the literature will examine both thoeretical and applied studies of organizational relations as they have been presented in professional journal articles, policy papers, seminar discussions, and evaluation reports of linkage efforts or related collaborative projects.

In reviewing the literature, two major theoretical trends were seen as offering important guidelines for applied research into linkage processes. The first of these, of which the different schools are subsumed under the general label of "general systems theory", stresses the embedded and interactive nature of the organization with a larger

environmental context. Instead of viewing the organization as an isolated social unit with its own self-contained laws and structures, stress is placed on the interdependent nature of the social network within which the organization is located. Briefly stated, general systems theory is a method of sensitizing the research to potentially overlooked sources of interaction between organizations and the larger system of environmental and social influences within which the organization is located. Essentially, an attempt is made to examine environmental inputs in terms of resources, expectations, and demands. These environmental inputs are then analyzed in terms of organizational responses which usually take the form of goods and services. The cycle is completed as various feedback and adjustment mechanisms are employed by the organization to reintroduce information regarding the nature of the output back into the environmental system. According to Banathy, Haveman, Madsen, and Duwe (1978), the nature of the linkage process is significantly explained and clarified through the implementation of analytic models based on general systems theory. This becomes more apparent when it is noted that linkage activities involve transforming inputs from the participating organizations into outputs which feed back to the respective organizations in order for the latter to accomplish their relative and mutually agreed-upon goals.

A second useful theoretical framework has come to be known in the literature as exchange theory. This theoretical approach stresses a cost/benefit analysis of interorganizational relations as a way of optimizing the outcome of cooperative activities. Exchange theory is thus applied

as a means of maximizing planning decisions so that barriers are minimized and potential facilitators and benefits are identified and capitalized. Thus, a fundamental motivation for entering into linkage agreements occurs when compatible organizations agree they do not have access individually to all the resources necessary to accomplish specific or general goals (Levine and White, 1960; Esterline, 1976). In simplest terms, the exchange relationship is an efficient means of maximizing goal attainment. Extrapolating from the general insights offered by exchange theory and general systems models, linkage is more likely to occur when two organizations have congruent goals and value subsystems (Litwak and Hylton, 1962). In view of these observations, successful collaboration can only occur if potential barriers and exchange requirements are recognized and systematically addressed.

The call for increased collaboration between organizations as a way of maintaining quality services in the wake of budgetary cutbacks, including the avoidance of wasteful and inefficient duplication of services, has begun to affect policy-making in the planning of educational programs (Proceedings of the Dissemination Processes Seminar, NWREL, 1980). In general, however, practitioners have not systematically documented the planning and organizational arrangements required to effectively establish interorganizational linkages for the advancement of vocational education (Banathy, Haveman, Madsen, and Oakley, 1978). Thus, in preparing for the present study, numerous barriers and facilitators to linkage were identified from the existing literature and grouped together under general categories.

Barriers to Linkage

According to Rinehart (1982), barriers to linkage can be grouped under several major rubrics. These include: budget and other cost factors, institutional policies and procedures, organizational characteristics, legal restrictions, semantic barriers, interpersonal factors, long-range planning considerations, initiating linkage, and what some authors have referred to as "hidden" barriers.

Many linkage projects fail to develop due to a lack of budgetary planning. Often, these problems become even more complex due to the fact that many linkage projects involve diverse funding sources and durations which do not match prescribed fiscal periods. For example, it is sometimes overlooked that many businesses operate on a quarterly basis and are six months out of pace with the school calendar. Vocational education programs often have the added disadvantage of lacking assurance about the availability of future funding for specific projects (Starr, et al., 1980). This lack of certainty reduces the incentive for cooperative planning with other agencies and organizations. Even within the system of vocational education, anticipated shifts in federally-funded categorical programs, and the lack of synchronization between school calendars and federal funding cycles, reduce the initiative for intra-organizational coordination (Starr, et al., 1980). Rigidity in funding allocations has also been cited by Goodisman and Groenenberg (1978) as another source of potential difficulty in establishing linkages, since funds for vocational education programs can be used only for the projects for which they were specifically appropriated.

Organizational policies and procedures in relation to personnel functions and activities are often antithetical to the linkage process. Given the complexity of organizational structures and the potential diversity of human responses, the larger and more bureaucratic the organization becomes, the more its policies and procedures tend to become detailed, specialized, and inflexible (Rinehart, 1982). The entrenchment of such rigidities into the decision-making process will most likely restrict the implementation of linkage plans (Rinehart, 1982; Crandall, 1977; Mojkowski and Gross, 1977). For example, some corporations require chain-of-command approvals for individual participation in formal linkage activities. There are also educational institutions which require similar approvals for individual contacts with certain corporations. The latter procedure is usually instituted to protect relationships with traditional corporate donors. Policies and procedures which affect hiring and master contracts with unions may further confound the establishment of vocational education program linkage with business and industry.

Other potential barriers surround the differences in objectives pursued by potential linkage partners (Starr, et al., 1980). Theories of inter-agency coordination emphasize the importance of similar goals, values and ideologies as a necessary precondition for linkage. Thus, even when planning cycles are synchronized and formal policies for inter-agency relations have been established, agencies may be hindered from pursuing coordinated planning due to differences in goals and priorities. In fact, disagreement in the selection of procedures for obtaining and utilizing data to plan for linkage and other cooperative arrangements can

often present a threat to mutual awareness and communication, and hence minimize the prospects of successful linkage (Starr, et al., 1980).

Goodisman and Groenenberg (1978) also mention conflicting eligibility requirements as another potential policy barrier. In the case of vocational education and apprenticeship programs, some apprenticeship programs do not indenture apprentices directly from school but instead select from "restricted pools" (Glover, 1980). Other potential policy and procedural barriers are mismatched reporting and monitoring requirements. Differences in this area make it difficult to exchange information necessary for stable planning (Goodisman & Groenenberg, 1978).

Another barrier to linkage may result from erroneous perceptions concerning the requirements of legislative acts such as those related to minimum wage, civil rights, liability, and workmen's compensation. It is necessary for the planner to understand the legal intent of such legislation, and the trends of interpretation in order to properly anticipate the risks in creating linkages.

Semantic barriers often occur when organizations attach different meanings to the same or similar terms. Indexical phrases like "training," "accountability," "communication," even "coordination" may have different meanings for different organizations. Rinehart (1982) suggests that these differences may even be magnified in the case of educational programs linked with business and industry. Rinehart also suggests that problems arising from semantic interpretations may be remedied by improved inter-organizational networks of communication.

Interpersonal factors refer to personality conflicts, status questions, hidden agendas, and differences in individual motivations (Hord, 1980). These barriers are rooted in the sociological and psychological

characteristics of the group as well as the individuals involved. To overcome these barriers, Rinehart (1982) suggests that there should be an attempt on the part of participants to utilize a better understanding of group dynamics, small group theory, and greater sensitivity to personal needs.

The timing, sequencing, and coordination of long-range planning of linkage efforts with other agency functions is another source of potential conflict. Linkage components must be built into the context of other long-range organizational planning in order to achieve efficient staffing and budgetary commitments (Rinehart, 1982). There are certain factors, however, which impede coordinated planning. Changing social, industrial, and demographic conditions, for example, often create problems for long-range planning in vocational education. Even occupational projections are not always reliable bases for program planning. For example, when a traditionally stable industrial facility moves from an area, this can naturally invalidate even the most rigorous of occupational projections (Starr, et al., 1980).

The planning of vocational education programs is also very vulnerable to political pressures operating both internally and externally to the system. Program support is therefore highly dependent on the ability of the planner to penetrate the various political hierarchies (Starr, et al., 1980). Support is also hindered due to occasional problems with budgetary timing. Some agencies plan for a short period of time, others for considerably longer periods of time. For those who plan on a year-to-year basis, priorities could be uncertain and could impede linkage arrangements (Hord, 1980).

Initiation of the linkage relationship is often hindered through the failure of participants to recognize the quality and nature of needs and demands that are likely to arise (Mojkowski and Gross, 1977; Crandall, 1977). The absence of clear goals and realistic objectives diminishes the extent to which conflicts can be resolved, and often increases the possibility that the initiating organization will be perceived as a threat (Parucci, 1977; Congreve, 1969). Mojkowski and Gross (1977) and Hall and Hord (1977) also attribute the failure of linkage projects to the inability of potential linkage participants to identify important functional requirements for the establishment of mutually beneficial commitments.

Finally, various "hidden" barriers have been cited which may not be immediately visible to observers, but which nonetheless pose significant and harmful problems to the development of successful coordinative arrangements (Rinehart, 1982). These include projections from previously unsuccessful attempts at linkage (Rinehart, 1982) and fear of organizational domination, the basis for which is the potential of the more powerful agency to control the internal activities of the subordinate agency (Starr, et al., 1980).

While the barrier categories mentioned above have general application to a wide variety of linkage relationships, a few specific barriers have been cited in the literature which are directly relevant to the linkage arrangement between vocational education and apprenticeship programs. For example, Glover (1980) mentions the importance of actual or perceived competency and age gaps in linking vocational education students with available apprenticeship positions. It is often believed

among various sectors of business and industry that vocational education programs are attractive to less competent students and are therefore an unlikely source of qualified candidates for apprenticeship positions. With regard to the age gap, Glover (1980) calls attention to the average age differences between entering apprentices (which is usually about 23) and secondary school graduates (which is about 18). It is also recognized that the size of the two systems may present a potential source of barriers to linkage. While there are only a few hundred jobs based on apprenticeship training, vocational education offers training for several thousand occupations.

Facilitators to Linkage

An identification of perceived barriers is crucial to the establishment of successful linkage relationships. Once the barriers or constraining factors are identified, then facilitative strategies can be implemented to reduce their effect on the linkage process. A survey of the literature revealed several major types of activities, strategies, organizational practices, and environmental features which have been identified as necessary prerequisite factors to coordination. (Esterline, 1976; Maurice, 1981). These have been grouped into the following categories: awareness, organizational characteristics, pre-planning and procedural concerns, availability of resources, and communication factors.

An important element in any linkage relationship is the degree to which all participants possess a practical awareness of the strengths and limitations of each agency and the probability and costs of achieving mutually-agreed-upon goals (Litwak and Hylton, 1962; Esterline, 1976;

Levine and White, 1960; Maurice, 1981). In the specific case of collaboration between educational and business organizations, an awareness and acknowledgment of the major differences in organizational forms and functions is crucial to the establishment of successful linkage efforts (Gold, 1981). For example, in industrial work settings, group structures and processes become more important since most projects require the cooperation of several workers, each having specific tasks to perform. In educational programs, by contrast, more attention is given to the development of individual skills within the context of diverse training programs. Another major difference exists in the motivational bases for engaging in specific tasks. Industrial work places teach skills and develop teams in response to specific organizational needs which are crucial to the survival and growth of the organization as well as to the continuation of individual rewards. On the other hand, school programs are not immediately dependent on the productive output of students for the continuation of these programs.

In addition to an awareness of organizational strengths and differences, it is also crucial for individuals involved in linkage to have a commitment to mutually-organized goals while simultaneously understanding the relationship of these goals to their own organizational purposes (Crandall, 1977; Esterline, 1976; Rubin, 1980). Not only must the objectives of linkage participants be perceived as compatible, but agency personnel should also feel that the cooperative arrangement will be of mutual benefit (Tindall, 1980; Aiken and Hage, 1968; Maurice, 1981). Commitments to similar goals, values and ideologies are central

to establishing successful linkage practices (Maurice, 1981). Not only should there be similarity in the formulation of immediate goals and objectives, but there should also be congruence between general linkage activities and those of each individual agency (Rubin, 1980).

It has also been noted that if collaboration is to be an effective means of resource sharing and program development, there must be a clear understanding of the potential benefits available to participating agencies. This includes the need to develop a balance between interdependency and inter-agency resource sharing and the attempt to maintain some degree of autonomy appropriate to the purposes of each organization. For linkage or collaboration to be attractive, it should not effect a substantial reduction in the visibility or independence of the participating organizations (Proceedings of the Dissemination Processes Seminar, NWREL, 1980).

Certain organizational characteristics have been identified which appear to facilitate linkage or collaboration. Some of these characteristics are: a level of organizational stability which will not be threatened by risk-taking (Proceedings from the Dissemination Processes Seminar, NWREL, 1980), the presence of advocates in each organization who support the idea of linkage (Crandall, 1977), and strong leadership capacities and staff competency, especially in the area of problem-solving skills (Mojkowski and Gross, 1977) or which have had experiences with cooperative arrangements in the past (Aiken and Hage, 1968) are also more likely to possess characteristics necessary to the implementation of successful linkage. Finally, the allocation of high priority status to collaborative activities within participating organizations will strengthen the

assurance that time and resources will be allocated consistently to their planning and development.

Greater attention to pre-planning and other procedural concerns will also increase the probability of developing successful linkage arrangements. Tindall (1980) suggests that procedural agreements should be specific and permanently recorded. The North Dakota Inter-Agency Task Force on Inter-Agency Cooperation (in Tindall, 1980) suggests the following procedural agreements: the development of provisions for coordinating planning, reporting and funding cycles; the development of coordinated administrative procedures; the application of commonly shared interpretations and definitions; the development of efficient referral mechanisms; the provision of coordinated networks of informations dissemination and an integrated data base; and the synchronization of personnel training methods. Other procedural arrangements should be developed for the resolution of potential conflicts between agencies (Starr, et al., 1980) and for the periodic evaluation of specific inter-agency agreements (Tindall, 1980). Procedures for gaining entrance into an organization with which linkage activities are potentially desirable and establishing communicative links are also important to an agency (Hord, 1980). These procedures become even more effective when they are applied by individuals with personal ties to the agency of interest. Thus, the chances of establishing successful linkages are significantly increased if the initiating organization is represented by a trusted mediator.

Finally, communication networks also serve a vital function not only in the establishment of linkage relations, but also at every point

where decisions involve mutual input. In collaborative arrangements, it is important that communications emphasize information sharing, as opposed to the imposition of directives and orders (Pasmore, et al., 1978). In view of this, stable social networks and inter-organizational patterns of communication should be developed which emphasize the free exchange of information and which promote cooperative decision-making in all matters directly related to the linkage process (Louis and Sieber, 1979).

Methodology

Subjects

The present study consisted of two stages in which data were collected through the use of an initial open-ended interview, and later through a structured questionnaire which was developed from the responses given to interview items. A total of forty-six people, equally distributed over the five vocational education regions (Appendix A) and the seven apprenticeship regions (Appendix B), were initially interviewed. The interview sample consisted of the following participants: six Bureau of Apprenticeship and Training representatives; five apprenticeship committee members; four apprenticeship instructors; six apprentices; three state vocational education administrators; ten vocational education directors; five occupational specialists; and two vocational education students.

Based on these interview responses, a structured questionnaire was developed to identify potential barriers and facilitators to linkage and mailed to a purposive sample of 288 persons. The survey sample (which included 19 of the original 46 interviewees) was selected from each of the vocational education and apprenticeship regions, and consisted of the following persons: fifteen state vocational education representatives; 38 vocational education directors; 19 vocational education occupational specialists; 49 vocational education instructors; 15 representatives from the Bureau of Apprenticeship and Training; 72 apprenticeship committee members; and 70 apprenticeship instructors.

Materials

Data collection materials included: (1) an open-ended interview schedule used for purposes of exploratory analysis and the identification of potential barriers and facilitators related to linkage; and (2) a structured questionnaire for verifying previously identified barriers and facilitators, as well as for making comparisons between response groups.

The interview schedule. The original objectives of the interview instrument were to: (1) explore the primary functions of vocational education and registered apprenticeship programs; (2) identify potential barriers which may hinder or prevent linkage efforts; and (3) investigate possible facilitators for overcoming the identified barriers.

In developing the interview schedule, questions were formulated following a series of informal interviews conducted with agency personnel in the Tallahassee area. On the basis of these informal interviews, a series of open-ended questions were developed to obtain more specific information concerning: functional differences between vocational education and registered apprenticeship programs; qualitative differences between the completed vocational education student and the beginning apprentice; the degree to which working relationships exist between registered apprenticeship programs and vocational education; the training objectives of each organization; and an exploration of potential barriers and facilitators to establishing linkage between vocational education and apprenticeship programs. The interview schedule is presented in Appendix C.

The questionnaire. Based on the unstructured responses obtained through the interview schedule, a series of seventy-nine survey items were developed and sorted into eight sections. The statements developed for the survey were worded in either a moderately positive or negative manner so that reliable variance with respect to the attitude in question could be obtained (see Nunally, 1978:605). Subjects were instructed to respond to each statement by circling a number ranging from strongly agree (1) to strongly disagree (5), with a middle position (3) representing a neutral response.

The survey items were sorted according to content and grouped into the following categories: (1) the nature of the process for selecting registered apprentices, (2) the administrative relationship between registered apprenticeship programs and vocational education, (3) the nature and quality of instruction in vocational education, (4) the issues surrounding the granting of "advanced credit" in apprenticeship programs for training received in vocational education, (5) the level of awareness and the nature of communication between and throughout both organizations, (6) the characteristics of apprenticeship programs and vocational education, (7) potential facilitators for the linking of vocational education and registered apprenticeship programs, and (8) potential barriers to the linking of vocational education and registered apprenticeship programs. Section nine supplemented the previous sections by requesting participants to rank order seven statements which reflected the statement categories in sections one through six. In section ten of the questionnaire, respondents were requested to answer two open-ended questions concerning

the most problematic barrier to linkage and suggestions for overcoming the perceived barrier. The survey instrument is presented in Appendix D.

A cover letter was enclosed with each mailed survey (see Appendix E) which explained the purpose and objectives of the research project. Subjects were asked to complete the survey and were assured that their responses would remain confidential. Upon completing the survey, respondents were directed to return the questionnaire in an enclosed pre-addressed, stamped envelope prior to a specified deadline date. Subjects were also encouraged to contact the project director in the event that any questions or problems arose.

Procedure

Telephone interview procedure. A list of sixty vocational education and apprenticeship personnel was drawn from a number of directories and sources. The Bureau of Apprenticeship and Training for the State of Florida provided the project staff with a directory of regional BAT representatives. From the BAT, information was also obtained regarding regional apprenticeship programs. A sample of those apprenticeship programs were asked to supply the names, addresses, and phone numbers of committee members, apprenticeship instructors, and registered apprentices. Information regarding vocational education directors and occupational specialists was obtained from the Florida Education Directory. A list of vocational education instructors was drawn from the Directory of Schools and Courses for Industrial Education, and from the instructors, information was also obtained concerning vocational education students. In most cases, randomly selected subjects were

contacted during daily office hours, while vocational education students and apprentices were contacted at home in the evening.

A consistent procedure for phoning respondents was employed and included techniques which standardized the interview format and data collection procedures (see Borg and Gall, 1963; Englehart, 1972; and Selltiz, Wrightsman, and Cook, 1976). Interviews began with an introduction (see Appendix C, p. 1) and an explanation of the survey objectives. Subjects were then asked if they could spend 15 to 30 minutes answering some questions regarding vocational education and apprenticeship programs, and were assured that all responses would remain anonymous.

The essential content of each subject's response was recorded on the interview instrument. Any comments regarding potential barriers or facilitators to linkage were also noted in designated spaces. In the case of brief or noncommittal responses, interviewers were instructed to utilize probes to obtain fuller responses. This was done with the understanding that the pace of the interview should be moderated so that all questions would be completed in a reasonable period of time.

Following the list of questions, the interviewer recounted a list of barriers previously identified by the participant during the course of the interview. The respondent was then asked to confirm or deny the importance of these barriers and to offer suggestions regarding relevant facilitators to the linkage process. In closing, the interviewer thanked the subject for cooperating and informed the respondent that his/her subsequent participation in a future survey may be requested.

Survey procedure. Questionnaires were mailed to a purposively selected sample of subjects who were selected on the basis of the following criteria: type of organization (state and local vocational education, local apprenticeship, and Bureau of Apprenticeship and Training); type of position within the respective organization (vocational education administrator, vocational education director, occupational specialist, vocational education instructor, BAT representative, apprenticeship committee member, and apprenticeship instructor); type of trade (plumbing, carpentry, electricity, air conditioning/heating/refrigeration, bulding/construction, sheet metal, operating engineer, auto mechanics, painting, multitrade and others); and regional location for both vocational education (Appendix A) and apprenticeship (Appendix B). Through random selection of respondents within each of the above categories, a representative cross section of agency personnel in Florida was obtained from the population of all persons who could potentially be involved in organizational linkage activities between apprenticeship programs and vocational education.

In developing the categorical dimensions and content of the survey, a complete list of relevant items derived from the telephone interviews were verified by content experts and checked for possible duplication. Once verified, the survey items were categorized and then re-examined by experts in the respective subject areas to confirm content validity and appropriate category membership. An initial pilot survey was then field tested on a small sample of agency personnel to establish certainty that the questionnaire was understandable, manageable, relatively inoffensive, and effective. Formative evaluation was continued until

all noticeable problems were corrected and the survey instrument was judged to be efficient and reilable in light of the given research objectives.

Along with the questionnaire, a cover letter and pre-addressed stamped envelope were enclosed and mailed to each of the 288 randomly selected subjects. As completed surveys were returned, they were coded for identification according to an identification number, type of organization, type of position, trade (where applicable), and regional location.

Results and Discussion

Descriptive Characteristics

Of the 288 surveys which were sent to the sample of apprenticeship and vocational education personnel, 106 (37.7%) were completed and returned. Twenty surveys (7%) were returned incomplete because the participants had either decided not to respond or else had relocated and 164 surveys (56%) were not returned at all. The return rates for each of the respective agencies, occupational positions within the organizations, trade specializations, and apprenticeship and vocational education regions are presented in Table 1. (See page 27).

Among the various positions within the organizations, State Vocational Education (VE) administrators and Bureau of Apprenticeship and Training (BAT) representatives had the highest return rates (60% for each), while apprenticeship instructors (27%) and committee members (32%) returned the smallest percentage of surveys. Among the various trade specializations (which consisted of all apprenticeship personnel and VE instructors), the highest return rate came from the multitrade area in which all four respondents completed and returned their surveys. By contrast, not one of the twelve operating engineers returned a completed survey, and only one of the twenty-four plumbers (4%) responded to the questionnaire. Vocational Education Region Five returned the highest percentage of completed surveys (45%), while VE Region Two returned the least (26%). Among the apprenticeship regions, Region Three was the leading participator (50%), while Regions Two and Seven each returned only 27% of the surveys.

Table 1

Return Rates According to Agency, Position, Trade, and Region

Agency	Number of Surveys Sent	Number Returned	Percent Returned
State VE Administrators	15	09	60%
Local VE Personnel	116	46	40%
BAT Representatives	15	09	60%
Apprenticeship Personnel	142	42	30%
Total	288	106	37%
Positions			
VE Administrators	15	09	60%
VE Directors	38	20	53%
Occupational Specialists	29	09	45%
VE Instructors	49	17	35%
BAT Representatives	15	09	60%
Apprenticeship Committee Members	72	23	32%
Apprenticeship Instructors	70	19	27%
Trades			
Plumbing	24	01	4%
Carpentry	35	10	29%
Electricity	44	16	36%
Air Conditioning/Heating/ Refrigeration	14	05	36%
Building and Construction	12	07	58%
Sheet Metal	11	04	36%

Table 1 - Continued

Return Rates According to Agency,
Position, Trade, and Region

Trades (continued)	Number of Surveys Sent	Number Returned	Percent Returned
Operating Engineer	12	04	36%
Auto Mechanics	06	03	50%
Painters	04	01	25%
Multitrade	04	04	100%
Other	25	08	32%
VE Region (Appendix A)			
1	64	21	33%
2	46	12	26%
3	38	15	40%
4	76	29	38%
5	64	29	45%
Apprenticeship Region (Appendix B)			
1	36	12	33%
2	45	12	27%
3	38	19	50%
4	49	18	37%
5	50	22	44%
6	37	14	38%
7	33	09	27%

Data Analysis of Survey Items

In each of the sections which follow, survey items were analyzed by use of general frequency distributions and percentage rates. These figures represent rates of agreement and were obtained by combining both "strongly agree" and "agree" responses into one category. Although only combined agreement rates are presented in the tables, any unusual patterns in the data will be noted in the accompanying text.

In addition, survey items were also analyzed by averaging the responses of all subjects in each of the four agency categories (State VE administrators, BAT representatives, local VE personnel and apprenticeship personnel) for each item. The lowest and highest possible mean scores for an item were 1 (strongly agree) and 5 (strongly disagree), respectively, with a mean of three indicating a neutral response. Average responses which were less than or equal to 2.5 indicated general agreement, and average responses which were greater than or equal to 3.5 indicated general disagreement. One-way analysis of variance tests were also used to compare the average responses of the four agency groups on each of the survey items. Thus, F-ratios and significance levels will also be presented along with mean scores in relevant tables.

Nature of the Process for Selecting Apprentices

A large percentage of respondents from all four agency groups agreed that the process of selecting registered apprentices is affected by the economy and the job market (see Table 2, item 7, at page 32). In particular, 78% of the State VE administrators, 100% of the BAT representatives, 91% of the local VE personnel and 86% of the apprenticeship personnel agreed with this item (item 7). It follows, therefore, that linkage efforts which focus on the selection of VE students into apprenticeship programs

must consider the economic conditions within that geographical area of the linkage.

Vocational Education Administrators (89%) were only slightly more likely than BAT representatives (76%) to feel that the selection process is often not communicated to the vocational education student (item 2). By contrast, VE administrators were much more likely than Bureau of Apprenticeship and training representatives to agree that the nature of the selection process: (1) favors those who have a friend or relative in the trades (item 2); (2) is often conducted at a time of the year that requires high school graduates to wait for nearly a year after graduation before they can apply (item 3); (3) affords no preference for prior training in vocational education (item 4); (4) provides a way for keeping the labor market narrow (item 5); and (5) limits the entry of younger applicants (item 6).

Although the pattern was not quite as marked, local VE personnel were also more likely than apprenticeship personnel to agree with all seven items related to the process of apprenticeship selection. Local VE personnel were especially more likely to feel that the selection process: (1) favors those who have a friend or relative in the trades (item 1); (2) provides a way for keeping the labor market narrow (item 5); and (3) limits the entry of younger applicants (item 6).

According to the data presented in Table 3, the mean response rates were significantly different (at the .05 level) between groups on all items, except items 2 and 7. All groups tended to be in agreement that the selection process is affected by the economy (item 7), and there appeared to be a generally neutral mean response pattern with regard to the statement that the apprenticeship selection process is often not

communicated to the VE student (item 2). On all other items, the mean responses of VE administrators and local VE personnel tended to be in agreement, while those of BAT representatives and apprenticeship personnel tended to be in disagreement. The differences between VE and apprenticeship respondents on these items was significant at the .01 level of significance.

In summary, it appears that both VE administrators and local VE personnel were much more likely to feel that the structure of the process for selecting apprentices affords more barriers than facilitators to providing apprenticeship opportunities for vocational education students. By contrast, Bureau of Apprenticeship and Training representatives and apprenticeship personnel were more likely to disagree with these items and to thereby feel that the process is open and nondiscriminatory in nature.

Table 2

Number and Percentage of Respondents in Agreement with Items Related to the Process for Selecting Apprentices According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
The process of selecting registered apprentices:				
1. favors those who have a friend or relative in the trades.	5 (56%)	2 (22%)	27 (59%)	6 (14%)
2. is often not communicated to the vocational education student.	8 (89%)	6 (67%)	32 (70%)	17 (40%)
3. is often conducted at a time of the year that requires high school graduates to wait for nearly a year after graduation before they can apply.	4 (44%)	0 (0)	18 (39%)	4 (10%)
4. affords no preference for prior training in vocational education.	8 (89%)	2 (22%)	26 (57%)	10 (24%)
5. provides a way for keeping the labor market narrow.	6 (67%)	0 (0)	24 (52%)	3 (7%)
6. limits the entry of younger applicants.	5 (56%)	0 (0)	21 (47%)	6 (14%)
7. is affected by the economy and the job market.	7 (78%)	9 (100%)	42 (91%)	31 (86%)

Table 3

Mean Response Scores, F-Ratios and Significance Levels
for Items Related to the Process for Selecting
Apprentices According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
The process of selecting registered apprentices:						
1. favors those who have a friend or relative in the trades.	2.33	3.67	2.65	3.64	9.37	p>.01
2. is often not communicated to the vocational education student.	2.11	2.78	2.33	2.90	2.54	p=.06
3. is often conducted at a time of the year that requires high school graduates to wait for nearly a year after graduation before they can apply.	2.67	4.00	2.83	3.79	9.26	p>.01
4. affords no preference for prior training in vocational education.	1.89	3.78	2.52	3.63	10.99	p>.01
5. provides a way for keeping the labor market narrow.	2.22	4.22	2.70	4.14	20.65	p>.01
6. limits the entry of younger applicants.	2.44	4.22	2.82	4.05	14.60	p>.01
7. is affected by the economy and the job market.	1.78	1.56	1.74	2.02	.92	p=.43

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with the survey item.

The Administrative Relationship between Apprenticeship Programs and Vocational Education

None of the VE administrators and about one-third of the BAT representatives felt that the exchange of monies and services between registered apprenticeship programs and vocational education is a barrier to these groups having a close working relationship because of the procedures used by vocational education to select and certify apprenticeship instructors (see Table 4, item 8, at page 36). BAT representatives were also much more likely than VE administrators to feel that the administrative relationship between registered apprenticeship programs and vocational education tends to create barriers because of: (1) the way vocational education distributes funds earned through apprenticeship instruction (item 9); (2) a lack of awareness by apprenticeship personnel concerning the funding of vocational programs for apprentices (item 10); and (3) problems concerning the allotment and use of materials for apprenticeship classes in vocational facilities (item 11).

The differences between local VE personnel and apprenticeship personnel on these items were much less apparent. Local VE personnel were only slightly more likely to feel that: (1) lack of awareness by apprenticeship personnel concerning the nature of funding VE programs (item 10); and (2) problems concerning the use of materials for apprenticeship classes presented barriers to the development of close working relationships between registered apprenticeship programs and vocational education (item 11). By contrast, local apprenticeship personnel were somewhat more likely to feel that the distribution of funds presented a barrier to the exchange of services (item 9).

Mean response rates (Table 5, at page 37) to these items revealed no significant differences between agency groups except in regard to the way in which vocational education distributes funds earned through apprenticeship instruction (item 9). Both BAT representatives and apprenticeship personnel were significantly more likely than VE administrators and local VE personnel to agree that the distribution of funds is a barrier to the development of close working relations between apprenticeship programs and vocational education.

Thus, in summary, it appears that the distribution of funds earned through apprenticeship instruction is seen as being more of a problem to BAT representatives than it is to VE administrators. This indicates that perhaps representatives from the Bureau of Apprenticeship and Training feel that before closer working relations can be developed, there needs to be greater mutual decision-making involved on the part of both agencies regarding the allocation and distribution of funds earned through apprenticeship instruction.

Table 4

Number and Percentage of Respondents in Agreement with Items concerning the Administrative Relationship Between Apprenticeship Programs and Vocational Education According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
The exchange of monies and services is a barrier because of:				
8. the procedures used by vocational education to select and certify apprenticeship instructors.	0 (0)	3 (33%)	10 (22%)	8 (20%)
9. the way vocational education distributes funds earned through apprenticeship instruction.	1 (11%)	6 (67%)	9 (20%)	12 (29%)
10. a lack of awareness by apprenticeship personnel concerning funding of vocational programs for apprentices.	3 (33%)	6 (67%)	21 (46%)	16 (40%)
11. problems concerning the allotment and use of materials for apprenticeship classes in vocational facilities.	4 (44%)	7 (78%)	20 (45%)	17 (42%)

Table 5

Mean Response Scores, F-Ratios and Significance Levels
for Items concerning the Administrative Relationship
Between Apprenticeship Programs and Vocational Education
According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
The exchange of monies and services is a barrier because of:						
8. the procedures used by vocational education to select and certify apprenticeship instructors.	3.89	3.11	3.49	3.41	.82	p=.49
9. the way vocational education distributes funds earned through apprenticeship instruction.	3.56	2.22	3.38	2.95	4.37	p>.01
10. a lack of awareness by apprentice-ship personnel concerning funding of vocational programs for apprentices.	3.11	2.44	2.83	2.92	.55	p=.65
11. problems concerning the allotment and use of materials for appren-ticeship classes in vocational facilities.	2.78	2.00	2.78	2.88	1.64	p=.19

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with the survey item.

Nature of Instruction in Vocational Education

Survey items in this section revealed an extremely wide difference of opinion between administrators in the Bureau of Apprenticeship and Training and those in vocational education (Table 6). All BAT representatives who completed the survey felt that instruction in vocational education develops only general skills and also leaves its students with the impression that they are qualified for jobs for which they are not (item 19). By contrast, none of the VE administrators felt this was the case. In addition, BAT representatives were more likely than VE administrators to agree that instruction in vocational education: (1) is outdated theoretically (item 13); (2) is limited by outdated equipment (item 14); (3) employs instructors with little practical experience (item 15); (4) is largely theoretical as opposed to "hands on" (item 16); (5) cannot prepare a student for job entry, but prepares students to be trained helpers (item 17); (6) prepares students for nonexistent jobs (item 18); (7) includes students who are often immature and would therefore not make good apprentices (item 21); and (8) includes students who are low in scholastic ability and would, therefore, not make good apprentices (item 22). One-third of the VE administrators felt that instruction in vocational education prepares students for work, thereby making apprenticeship unnecessary (item 20), while none of the BAT representatives agreed with this statement.

Although not as pronounced, a similar pattern emerged in comparing the responses of local VE personnel and apprenticeship personnel. With the exception of the statement that instruction in vocational education

prepares students for work without the need for apprenticeship programs (item 20), respondents employed as apprenticeship personnel were more likely than local VE personnel to agree with all items in this section on the nature of instruction in vocational education.

According to the data presented in Table 7, mean responses were significantly different between groups (at the .01 level of significance) on all items in this section. Both VE administrators and local VE personnel produced mean response rates greater than or equal to 3.5 (indicating disagreement) on all statements except items 20 through 22 (see Table 7 for content of items). By contrast, BAT representatives were in agreement with most of the items in this section (as evidenced by mean response rates less than or equal to 2.5). Compared with respondents in other agency groups, apprenticeship personnel tended to be more equally divided between agreement and disagreement on most of these items.

By way of summary, although apprenticeship personnel were slightly more likely than local VE personnel to feel that the quality of instruction in vocational education is somewhat deficient, they were also more equally divided between agreement and disagreement on these statements. Hence, it does not appear that apprenticeship personnel are of the opinion that the quality and nature of vocational education instruction will create potential barriers to linkage.

By contrast, BAT representatives were much more likely to be in agreement with these items and to thereby feel that the general quality of instruction in vocational education would present barriers to the closer working relationship of registered apprenticeship programs and vocational education.

Table 6

Number and Percentage of Respondents in Agreement with Items concerning Instruction in Vocational Education According to Agency Group

Survey Item	VE Administrator	DAT	Local VE	Apprentice-ship
Instruction in vocational education:				
12. develops only general work skills.	0 (0)	9 (100%)	10 (22%)	20 (48%)
13. is outdated theoretically.	1 (11%)	6 (67%)	6 (11%)	12 (28%)
14. is limited by outdated equipment.	2 (22%)	6 (67%)	10 (22%)	14 (33%)
15. employs instructors with little practical experience.	1 (11%)	4 (44%)	5 (11%)	16 (38%)
16. is largely theortetical as opposed to "hands on."	2 (22%)	7 (78%)	6 (13%)	18 (43%)
17. cannot prepare a student for job entry, but prepares students to be trained helpers.	1 (11%)	5 (56%)	6 (13%)	24 (57%)
18. prepares students for non-existent jobs.	1 (11%)	7 (78%)	4 (9%)	12 (28%)
19. leaves its students with the impression that they are qualified for jobs for which they are not.	0 (0)	9 (100%)	8 (17%)	27 (64%)
20. prepares students for work, thereby making apprenticeship unnecessary.	3 (33%)	0 (0)	13 (28%)	1 (2%)

Table 6 - continued

Number and Percentage of Respondents in Agreement with Items concerning Instruction in Vocational Education According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
21. includes students who are often immature and would therefore not make good apprentices.	2 (22%)	4 (44%)	18 (39%)	30 (72%)
22. includes students who are low in scholastic ability and would, therefore, not make good apprentices.	3 (33%)	5 (56%)	18 (39%)	29 (69%)

Table 7

Mean Response Scores, F-Ratios and Significance Levels
for Items concerning Instruction in Vocational Education
According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
Instruction in vocational education:						
12. develops only general work skills.	4.22	1.89	3.73	2.95	9.07	p>.01
13. is outdated theoretically.	4.11	2.33	3.96	3.24	8.27	p>.01
14. is limited by outdated equipment.	3.56	2.33	3.65	3.19	3.76	p=.013
15. employs instructors with little practical experience.	4.22	2.56	4.22	3.19	9.34	p>.01
16. is largely theoretical, as opposed to "hands on".	3.89	2.22	4.00	3.05	8.60	p>.01
17. cannot prepare a student for job entry, but prepares students to be trained helpers.	4.11	2.56	4.11	2.74	13.52	p>.01
18. prepares students for non-existent jobs.	4.00	1.78	4.1[illegible]	3.29	14.26	p>.01
19. leaves its students with the impression that they are qualified for jobs for which they are not.	3.67	1.33	3.70	2.45	20.45	p>.01
20. prepares students for work, thereby making apprentice-ship unnecessary.	3.33	4.44	3.39	4.48	12.46	p>.01

Table 7 - continued

Mean Response Scores, F-Ratios and Significance Levels
for Items concerning Instruction in Vocational Education
According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
21. includes students who are often immature and would, therefore, not make good apprentices.	3.44	2.78	2.96	2.24	5.95	p>.01
22. includes students who are low in scholastic ability and would, therefore, not make good apprentices.	3.44	2.33	3.11	2.36	5.33	p>.01

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with the survey item.

Issue of Advanced Credit in Apprenticeship Programs for Training Received in Vocational Education

In regard to the issue of granting advanced credit in apprenticeship programs for training received in vocational education (see Table 8, at page 46), BAT representatives were only somewhat more likely than VE administrators to feel that there may be problems with such a system because: (1) contractors can't afford it (item 23); and (2) industry personnel want to make their own decisions regarding credit (item 24). By contrast, VE administrators were somewhat more likely than BAT representatives to feel that: (1) apprenticeship committees do not want to give credit for training based on theory rather than practical experience (item 25); and (2) apprenticeship committees would prefer not to give credit because it is more cost effective to have an apprentice indentured for the maximum tenure (item 28). Differences of opinion were most apparent in regard to items 27 and 29 where two-thirds of the BAT representatives and none of the VE administrators agreed that: (1) credit should only be given for past work experience (rather than related training), which can facilitate present job productivity as an apprentice (item 27); and (2) advanced credit would be an issue because a year in vocational education is not worth a year as an apprentice (item 29).

On the local level, VE personnel were more likely to be neutral on all items in this section. On those items where VE personnel were more likely than apprenticeship personnel to agree, there was a tendency to feel that apprenticeship committees would prefer: (1) the untrained

applicant who can be taught their way (item 26); and (2) that credit not be given because it is more cost effective to have an apprentice indentured for the maximum tenure (item 28). On all other items, apprenticeship personnel were more in agreement than were VE personnel.

Mean response levels between agency groups were significantly different (at the .01 level of significance) for items 27, 28, and 29 (see Table 9 for content of items). BAT representatives and apprenticeship personnel were in stronger disagreement regarding the statement that apprenticeship committees would prefer not to give credit for training in vocational education because it is more cost effective to have an apprentice indentured for the maximum tenure (item 28). On the other hand, VE administrators and local VE personnel had stronger feelings of disagreement with the sentiment that credit should only be given for past work experience, as opposed to related vocational training (item 27); and also with the statement that a year in vocational education is not comparable to a year as an apprentice (item 29).

Table 8

Number and Percentage of Respondents in Agreement with Items Concerning the Issue of "Advanced Credit" According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
The granting of advanced credit in apprentice-ship programs for training received in vocational education is an issue because:				
23. contractors can't afford it.	1 (11%)	3 (33%)	6 (13%)	9 (23%)
24. Industry personnel want to make their own decisions regarding credit.	5 (56%)	9 (100%)	26 (58%)	28 (67%)
25. apprenticeship committees do not want to give credit for training based on theory rather than practical experience.	6 (67%)	6 (67%)	22 (48%)	24 (59%)
26. apprenticeship committees prefer the untrained applicant who can be taught their way.	4 (44%)	3 (33%)	20 (44%)	12 (30%)
27. credit should only be given for past work experience, (rather than related training) which can facilitate present job productivity as an apprentice.	0 (0)	6 (67%)	4 (9%)	14 (33%)
28. apprenticeship committees would prefer not to give credit because it is more cost effective to have an apprentice indentured for the maximum tenure.	7 (78%)	2 (22%)	19 (41%)	7 (17%)
29. a year in vocational education is not worth a year as an apprentice	0 (0)	6 (67%)	10 (22%)	31 (74%)

Table 9

Mean Response Scores, F-Ratios and Significance Levels
for Items Concerning the Issue of "Advanced Credit"
According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
The granting of advanced credit in apprenticeship programs for training received in vocational education is an issue because:						
23. contractors can't afford it.	4.00	3.11	3.50	3.50	1.17	p=.33
24. industry personnel want to make their own decisions regarding credit.	2.44	1.67	2.56	2.48	2.12	p=.10
25. apprenticeship committees do not want to give credit for training based on theory rather than practical experience.	2.44	2.44	2.74	2.55	.39	p=.76
26. apprenticeship committees prefer the untrained applicant who can be taught their way.	2.89	3.44	2.85	3.45	2.56	p=.06
27. credit should only be given for past work experience (rather than related training), which can facilitate present job productivity as an apprentice.	4.11	2.67	3.74	3.24	5.38	p>.01
28. apprenticeship committees would prefer not to give credit because it is more cost effective to have an apprentice indentured for the maximum tenure.	2.22	3.67	2.76	3.64	8.80	p>.01
29. a year in vocational education is not worth a year as an apprentice.	4.33	2.00	3.63	2.07	24.10	p>.01

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with survey item.

In summary, the differences between administrative level respondents were once again more pronounced than those between local level personnel. In particular, BAT representatives were most likely to feel that the granting of advanced credit in apprenticeship programs for training received in vocational education may present problems to linkage efforts because of: (1) the perceived emphasis on theoretical, as opposed to practical, knowledge given in vocational education; and (2) the feeling that vocational education is of inferior quality to the experience gained through an equivalent amount of time in an apprenticeship program. Although local apprenticeship personnel were less likely than BAT representatives to express strong opinions about the general problems involved in granting credit for training received in vocational education, they did tend to agree that a year spent in vocational education is not comparable to a year of experience as an apprentice. It is interesting to note, however, that apprenticeship personnel tended to disagree with the idea that credit should only be given for past work experience. This indicated a willingness to assign some form of advanced credit for related vocational training.

Organizational Awareness and Communication

According to the data presented in Table 10, all of the BAT respondents felt that vocational educators lack understanding of apprenticeship programs (item 30). By contrast, only one-third of the VE administrators agreed with this statement (44% were neutral). On the local level, 39% of the VE personnel and 65% of the apprenticeship personnel felt that vocational educators lack a necessary understanding

of apprenticeship programs. In the case of item 31, 56% of the BAT representatives and 44% of the VE administrators felt that apprenticeship committees lack understanding of vocational education. At the local level, 74% of the respondents in vocational education and 48% of the apprenticeship personnel agreed with this statement. Thus, it appears that BAT representatives and apprenticeship personnel feel they have less understanding of vocational education than do VE respondents concerning the nature of apprenticeship programs.

Responses to other items in this section indicated that both BAT and local apprenticeship personnel were somewhat more likely to feel that: (1) vocational educators do not communicate with industry regarding curriculum planning (item 32); and (2) there is a lack of communication among vocational educators regarding apprenticeship programs and apprenticeship opportunities (item 33). On the other hand, both VE administrators and local VE personnel were more likely to agree that: (1) apprenticeship personnel fail to conduct awareness activities for vocational education staff and students (item 35); (2) there is a lack of communication between vocational education and the Bureau of Apprenticeship regarding apprenticeship programs (item 36); and (3) there is a lack of communication between apprenticeship committees and the Bureau of Apprenticeship regarding vocational education (item 37).

According to the data presented in Table 11, mean response rates between agency groups were significantly different (at the .01 level of significance) for items 30, 32, 35, and 37. BAT representatives tended to be in strong agreement with the statement that vocational educators lack understanding of apprenticeship programs (item 30). This complements

the responses of both VE administrators and VE personnel who agreed to a significantly greater extent that apprenticeship personnel fail to conduct awareness activities for vocational education staff and students (item 35). While mean response rates were predominantly neutral for all agency groups concerning communication between vocational education and the Bureau of Apprenticeship regarding apprenticeship programs (item 36), BAT representatives were in strong disagreement with the statement that there is a lack of communication between apprenticeship committees and the Bureau of Apprenticeship regarding vocational education (item 37).

In summary, it appears that administrative level personnel in both BAT and vocational education perceive a noticeable gap in communication between organizations, but are not overly concerned about any apparent lack of communication within their respective organizations. In particular, BAT representatives are concerned about what they see as a lack of understanding on the part of vocational education personnel concerning the nature and opportunities provided by apprenticeship programs, as well as a lack of communication with industry regarding VE curriculum planning. Interestingly, VE administrators feel a greater need to establish activities with apprenticeship personnel which would increase their awareness of apprenticeship programs.

Table 10

Number and Percentage of Respondents in Agreement with Items Related to Organizational Awareness and Communication According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
The granting of advanced credit in apprentice-ship programs for training received in voca-tional education is an issue because:				
30. vocational educators lack understanding of apprenticeship programs.	3 (33%)	9 (100%)	18 (39%)	24 (65%)
31. apprenticeship committees lack under-standing of vocational education.	4 (44%)	5 (56%)	34 (74%)	20 (48%)
32. vocational educators do not communicate with industry regarding curriculum planning.	5 (56%)	7 (78%)	13 (28%)	22 (52%)
33. there is a lack of communication among vocational educators regarding apprentice-ship programs.	7 (78%)	9 (100%)	26 (56%)	26 (62%)
34. there is a lack of communication among vocational educators concerning apprenticeships.	8 (89%)	9 (100%)	27 (60%)	27 (64%)
35. apprenticeship personnel fail to conduct awareness activities for vocational education staff and students.	8 (89%)	4 (44%)	35 (76%)	21 (50%)

Table 10 - continued

Number and Percentage of Respondents in Agreement with Items Related to Organizational Awareness and Communication According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
36. there is a lack of communication between vocational education and the Bureau of Apprenticeship regarding apprenticeship programs.	6 (67%)	5 (56%)	30 (65%)	20 (48%)
37. there is a lack of communication between apprenticeship committees and the Bureau of Apprenticeship regarding vocational education.	5 (56%)	2 (22%)	21 (46%)	17 (40%)

Table 11

Mean Response Scores, F-Ratios and Significance Levels for Items Related to Organizational Awareness and Communication According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
The granting of advanced credit in apprenticeship programs for training received in vocational education is an issue because:						
30. vocational educators lack understanding of apprenticeship programs.	2.89	1.56	3.13	2.55	7.08	p>.01
31. apprenticeship committees lack understanding of vocational education.	2.56	3.22	2.37	2.95	3.02	p=.03
32. vocational educators do not communicate with industry regarding curriculum planning.	2.89	2.11	3.48	2.67	6.21	p>.01
33. there is a lack of communication among vocational educators regarding apprenticeship programs.	2.44	1.67	2.65	2.50	2.68	p=.05
34. there is a lack of communication among vocational educators concerning apprenticeships.	2.33	1.44	2.51	2.50	3.46	p=.02
35. apprenticeship personnel fail to conduct awareness activities for vocational education staff and students.	2.00	3.11	2.15	2.83	5.69	p>.01

Table 11 - continued

Mean Response Scores, F-Ratios and Significance Levels
for Items Related to Organizational Awareness and
Communication According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
36. there is a lack of communication between vocational education and the Bureau of Apprenticeship regarding apprenticeship programs.	2.56	2.56	2.41	2.83	1.34	p=.26
37. there is a lack of communication between apprenticeship committees and the Bureau of Apprenticeship regarding vocational education.	2.33	3.89	2.48	3.12	7.71	p>.01

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with survey item.

Characteristics of Apprenticeship Programs and Vocational Education

According to the data presented in Table 12, respondents in all agency groups tended to agree that: (1) guidance counselors steer the "better" students away from vocational education (item 47); and (2) the Bureau of Apprenticeship and Training is essential for developing and/or maintaining a positive relationship between vocational education and apprenticeship programs (item 48). While there was no difference between local level personnel (40% for each group agreed), VE administrators (56%) were somewhat more likely than BAT representatives (22%) to agree that the relationship between joint and non-joint apprenticeship programs creates a barrier for linking vocational education and apprenticeship programs (item 44). Also, both VE administrators (67%) and local VE personnel (65%) were more likely than BAT respondents (11%) and apprenticeship personnel (29%) to feel that joint apprenticeship committees are influenced by traditions which may hinder cooperative relationships with vocational education (item 46).

While 89% of BAT representatives felt that vocational education personnel like to remain independent of the influence of apprenticeship personnel (item 38), only 56% of VE administrators felt that apprenticeship personnel like to remain independent (item 39). At the local level, differences between organizations were not large for these items. Interestingly, VE administrators (44%) were more likely than BAT representatives (22%) to agree that vocational education personnel are resistant to change (item 40). On the other hand, apprenticeship personnel (45%) were more likely than VE personnel (20%) to agree with this statement. Both VE administrators (44%) and VE personnel (54%) were more likely to

agree that apprenticeship personnel are resistant to change (item 41). While 22% of the BAT representatives felt that vocational educators try to exert too much control on apprenticeship programs (item 42), 44% of the VE administrators felt that apprenticeship personnel try to exert too much control on vocational education (item 43). Both VE administrators (67%) and local VE personnel (49%) were also in stronger agreement that apprenticeship personnel intentionally limit apprenticeship completions in order to limit the supply of trained workers (item 45).

According to the data presented in Table 13, there were significant differences (at the .01 level of significance) between agencies on items 38, 41, 45, 46, and 47 (refer to Table 13 for content of items). The strongest differences occurred with regard to item 45, where VE administrators were in agreement and both BAT representatives and apprenticeship personnel were in strong disagreement over the idea that apprenticeship personnel intentionally limit apprenticeship completions in order to limit the supply of trained workers. There was also relatively stronger disagreement on the part of BAT representatives and apprenticeship personnel, compared with VE administrators and local personnel, regarding the statement that joint apprenticeship committees are influenced by traditions which may hinder cooperative relationships with vocational education (item 46). In addition, BAT representatives were significantly more likely than respondents in other groups to agree that vocational education personnel like to remain independent of the influence of apprenticeship personnel (item 38). Local apprenticeship

personnel were significantly more likely than local vocational education personnel to disagree with the statement that apprenticeship personnel are resistant to change (item 41). Also, VE administrators were significantly more likely than local apprenticeship personnel to agree that guidance counselors steer the "better" students away from vocational education (item 47).

In summary, joint apprenticeship programs were seen by vocational education administrators and personnel as presenting a potential hinderance to developing more cooperative relations between the two organizations. On the other hand, BAT representatives perceived problems in creating more cooperative relations due to what they saw as a tendency on the part of vocational education personnel to remain independent of the influence of apprenticeship personnel.

Table 12

Number and Percentage of Respondents in Agreement with Items Concerned with Characteristics of Apprenticeship Programs and Vocational Education According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
The granting of advanced credit in apprentice-ship programs for training received in voca-tional education is an issue because:				
38. vocational education personnel like to remain independent of the influence of apprenticeship personnel.	4 (44%)	8 (89%)	22 (48%)	23 (55%)
39. apprenticeship personnel like to remain independent of the influence of voca-tional education.	5 (56%)	3 (33%)	27 (59%)	17 (40%)
40. vocational education personnel are resistant to change.	4 (44%)	2 (22%)	9 (20%)	19 (45%)
41. apprenticeship personnel are resistant to change.	4 (44%)	2 (22%)	24 (54%)	8 (19%)
42. vocational educators try to exert too much control on apprenticeship programs.	0 (0)	2 (22%)	2 (4%)	9 (21%)
43. apprenticeship personnel try to exert too much control on vocational education.	4 (44%)	1 (11%)	8 (17%)	3 (7%)

Table 12 - continued

Number and Percentage of Respondents in Agreement with Items Concerned with Characteristics of Apprenticeship Programs and Vocational Education According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
44. the relationship between joint and non-joint apprenticeship programs creates a barrier for linking vocational education and apprenticeship programs.	5 (56%)	2 (22%)	18 (40%)	17 (40%)
45. apprenticeship personnel intentionally limit apprenticeship completions in order to limit the supply of trained workers.	6 (67%)	1 (11%)	18 (49%)	1 (2%)
46. joint apprenticeship committees are influenced by traditions which may hinder cooperative relationships with vocational education.	6 (67%)	1 (11%)	30 (65%)	12 (29%)
47. guidance counselors steer the "better" students away from vocational education.	9 (100%)	7 (78%)	41 (89%)	27 (64%)
48. the Bureau of Apprenticeship and Training is essential for developing and/or maintaining a positive relationship between vocational education and apprenticeship programs.	7 (78%)	6 (67%)	24 (52%)	32 (76%)

Table 13

Mean Response Scores, F-Ratios and Significance Levels for Items Concerned with Characteristics of Apprenticeship Programs and Vocational Education According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
The granting of advanced credit in apprenticeship programs for training received in vocational education is an issue because:						
38. vocational education personnel like to remain independent of the influence of apprenticeship personnel.	2.78	1.67	2.85	2.55	4.46	p>.01
39. apprenticeship personnel like to remain independent of the influence of vocational education.	2.33	3.00	2.39	3.00	3.35	p=.02
40. vocational education personnel are resistant to change.	3.00	3.11	3.39	2.71	3.81	p=.01
41. apprenticeship personnel are resistant to change.	2.56	3.67	2.41	3.60	12.23	p>.01
42. vocational educators try to exert too much control on apprenticeship programs.	3.89	3.33	3.80	3.26	4.19	p=.01
43. apprenticeship personnel try to exert too much control on vocational education.	3.00	3.89	3.33	3.57	2.15	p=.10

Table 13 - continued

Mean Response Scores, F-Ratios and Significance Levels for Items Concerned with Characteristics of Apprenticeship Programs and Vocational Education According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
44. The relationship between joint and non-joint apprenticeship programs creates a barrier for linking vocational education and apprenticeship programs.	2.33	3.56	2.71	2.98	2.39	p=.07
45. apprenticeship personnel intentionally limit apprenticeship completions in order to limit the supply of trained workers.	2.22	4.33	2.89	4.26	23.02	p>.01
46. joint apprenticeship committees are influenced by traditions which may hinder cooperative relationships with vocational education.	2.11	4.11	2.28	3.27	13.93	p>.01
47. guidance counselors steer the "better" students away from vocational education.	1.22	1.67	1.70	2.26	4.77	p>.01
48. the Bureau of Apprenticeship and Training is essential for developing and/or maintaining a positive relationship between vocational education and apprenticeship programs.	2.22	2.11	2.54	2.12	1.38	p=.25

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with survey item.

Potential Facilitators for Linking Vocational Education and Apprenticeship Programs

According to the data presented in Table 14, a high percentage of respondents in all four groups were in agreement that it would be beneficial if: (1) vocational educators would more often solicit ideas and input from industry (item 60) concerning current needs, trends, and equipment (100% of both BAT representatives and VE administrators agreed); (2) vocational educators were more aware of apprenticeship programs (item 52) and the kind of workers needed in industry (100% of both BAT representatives and VE administrators agreed); (3) apprenticeship committees provided feedback to vocational education concerning the progress of vocational education students who became apprentices (item 59); (4) apprenticeship committee members were on vocational education, in addition to, apprenticeship committees (item 58); (5) more pre-apprenticeship programs were jointly developed by vocational education and apprenticeship committees (item 57); (6) apprentices' entry level could be clearly identified, thereby assuring appropriate placement in the apprenticeship program (item 56); (7) the Bureau of Apprenticeship would assume responsibility in establishing closer ties (item 53) between vocational education and apprenticeship programs (although 80% of local VE personnel compared with 69% of local apprenticeship personnel agreed with this); (8) apprenticeship committees would make parents of vocational education students aware of apprenticeship opportunities (item 51); and (9) graduating vocational education students were better prepared (item 50) in the basic skills (although only 61% of local VE personnel agreed with this item).

BAT representatives were more likely than VE administrators to feel that linkage could be facilitated if a greater variety of apprenticeship programs were established (item 55). Also, both BAT representatives and apprenticeship personnel were in greater agreement that it would be beneficial to linkage efforts if: (1) vocational education were to raise its entry standards and only admit the more competent students (item 49); and (2) apprenticeship programs (item 54) were made mandatory (100% of the BAT representatives agreed with this item compared with 11% of the VE administrators, while 44% of the apprenticeship personnel agreed compared with 20% of the local VE personnel).

Mean response rates for these items indicated significant differences between groups with regard to items 49 and 54 (see Table 15 for contents of items). BAT representatives were significantly more likely than local VE personnel to agree that it would be beneficial if vocational education were to raise its entry standards and only admit the more competent students (item 49). BAT representatives were also more likely than both VE administrators and local VE personnel to agree that it would be beneficial if apprenticeship programs were made mandatory (item 54). Mean response rates for all agency groups were in high agreement with items which indicated support for increased awareness of apprenticeship programs on the part of vocational educators (item 52), feedback from apprenticeship organizations regarding VE students who became apprentices (item 59), and greater solicitation of ideas and input from industry on the part of vocational educators (item 60).

Table 14

Number and Percentage of Respondents in Agreement with Items Concerned with Facilitators to Linkage According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
It would be beneficial if:				
49. vocational education were to raise its entry standards and only admit the more competent students.	3 (33%)	7 (78%)	17 (37%)	30 (51%)
50. graduating vocational education students were better prepared in the basic skills.	8 (89%)	8 (89%)	28 (61%)	36 (86%)
51. apprenticeship committees would make parents of vocational education students aware of apprenticeship opportunities.	8 (89%)	8 (89%)	42 (91%)	36 (86%)
52. vocational educators were more aware of apprenticeship programs, and the kind of workers needed in industry.	9 (100%)	9 (100%)	41 (89%)	37 (88%)
53. the Bureau of Apprenticeship would assume responsibility in establishing closer ties between vocational education and apprentice-ship programs.	7 (78%)	8 (89%)	37 (80%)	29 (69%)
54. apprenticeship programs were made mandatory.	1 (11%)	9 (100%)	9 (20%)	18 (44%)
55. a greater variety of apprenticeship programs were established.	4 (44%)	8 (89%)	27(59%)	24 (57%)

Table 14 - continued

Number and Percentage of Respondents in Agreement with Items Concerned with Facilitators to Linkage According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
56. apprentices' entry level could be clearly identified, thereby assuring appropriate placement in the apprenticeship program.	7 (78%)	9 (100%)	38 (83%)	32 (76%)
57. more pre-apprenticeship programs were jointly developed by vocational education and apprenticeship committees.	9 (100%)	7 (78%)	38 (84%)	30 (71%)
58. apprenticeship committee members were on vocational education and apprentice-ship committees.	9 (100%)	7 (78%)	40 (87%)	37 (88%)
59. apprenticeship committees provided feed-back to vocational education concerning the progress of vocational education students who became apprentices.	8 (89%)	9 (100%)	40 (87%)	36 (86%)
60. vocational educators would more often solicit ideas and input from industry concerning cur-rent needs, trends, and equipment.	9 (100%)	9 (100%)	37 (82%)	40 (95%)

Table 15

Mean Response Scores, F-Ratios and Significance Levels for Items concerned with Facilitators to Linkage According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
It would be beneficial if:						
49. vocational education were to raise its entry standards and only admit the more competent students.	3.00	2.00	3.17	2.43	5.39	p>.01
50. graduating vocational education students were better prepared in the basic skills.	1.89	1.88	2.59	2.05	4.27	p=.01
51. apprenticeship committees would make parents of vocational education students aware of apprenticeship opportunities.	1.89	1.89	1.98	1.98	.11	p=.95
52. vocational educators were more aware of apprenticeship programs, and the kind of workers needed in industry.	1.56	1.44	1.98	1.93	2.00	p=.12
53. the Bureau of Apprenticeship would assume responsibility in establishing closer ties between vocational education and apprenticeship programs.	2.22	1.67	2.06	2.24	1.08	p=.36
54. apprenticeship programs were made mandatory.	3.67	1.00	3.65	2.88	14.00	p>.01

Table 15 - continued

Mean Response Scores, F-Ratios and Significance Levels for Items Concerned with Facilitators to Linkage According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
55. a greater variety of apprentice-ship programs were established.	2.89	1.67	2.59	2.50	2.45	p=.07
56. apprentices' entry level could be clearly identified, thereby assur-ing appropriate placement in the apprenticeship program.	1.67	1.44	1.96	2.07	1.95	p=.13
57. more pre-apprenticeship programs were jointly developed by voca-tional education and apprentice-ship committees.	1.56	1.78	2.11	2.33	2.24	p=.09
58. apprenticeship committee members were on vocational education and apprenticeship committees.	1.78	1.67	2.04	1.95	1.04	p=.38
59. apprenticeship committees provided feedback to vocational education concerning the progress of vocation-al education students who became apprentices.	1.78	1.56	1.91	1.95	1.02	p=.38
60. vocational educators would more often solicit ideas and input from industry concerning current needs, trends, and equipment.	1.67	1.44	2.11	1.74	3.54	p=.02

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with survey items.

In summary, while there was strong disagreement between apprenticeship and VE respondents regarding the question of raising entry standards into VE programs and making apprenticeship programs mandatory, agreement tended to be uniformly high on all other items in this section. In particular, respondents in all agency groups clearly supported increased communication and planning between vocational education programs and industry. In addition, there was a high level of agreement in regard to cooperative planning efforts in which apprenticeship committees would provide more feedback into the development of vocational education programs.

Potential Barriers to the Linking of Vocational Education and Apprenticeship Programs

Both administrative and local level personnel in vocational education were more likely to agree that potential barriers to linking vocational education and apprenticeship programs currently exist in: (1) the process for selecting apprentices (see Table 16, item 61); (2) the nature of communication (item 67) between vocational education and apprenticeship programs (although a high percentage of BAT representatives and apprenticeship personnel also agreed with this item); (3) the nature of communication within particular school systems or vocational technical settings (item 68); (4) communication between the Bureau of Apprenticeship and vocational education personnel (item 70); and (5) apprenticeship committees in general (item 76). In addition, VE administrators were more likely than BAT representatives to feel that a potential barrier to linkage exists due to the nature of communication by apprenticeship personnel within apprenticeship programs (item 69).

A larger percentage of BAT representatives and local apprenticeship personnel agreed that the following represented a barrier to linking vocational education and apprenticeship programs: (1) the type of instruction currently received in vocational education (item 63); (2) the type of student who completes vocational education (item 64); (3) vocational education instructors in general (item 73); (4) vocational education students (item 74); and (5) vocational education guidance counselors or occupational specialists (item 75). In addition, respondents in BAT were more likely than VE administrators to feel that the following presented barriers to linkage efforts: (1) the administrative relationship which presently exists between registered apprenticeship programs and vocational education (item 62); (2) the issue of advanced credit for previous vocational training in apprenticeship programs (item 65); and (3) lack of communication with industry.

About one-third of the respondents in all agency groups agreed that vocational education directors (item 72) were a potential source of difficulty in establishing coordination efforts between vocational education and apprenticeship programs. Also, about two-thirds of the respondents in all four groups felt that the understanding vocational education has of apprenticeship and the understanding apprenticeship has of vocational education represents a barrier to linkage (item 66). Although local VE personnel (35%) were somewhat more likely, few respondents in any group agreed that the nature of communication between the Bureau of Apprenticeship and local apprenticeship personnel was a problem in establishing cooperative relations between vocational

education and apprenticeship programs (item 71).

According to the data presented in Table 17, there were significant differences (at the .01 level of significance) between agencies on items 61, 63, 64, 71, 76, 77, and 79 (refer to Table 17 for content of items). While BAT representatives and apprenticeship personnel tended to agree, VE administrators and local VE personnel strongly disagreed that the type of instruction currently received in vocational education presents a barrier to linkage activities (item 63). Respondents in all groups uniformly agreed that understanding (item 66) and communication (item 67) between vocational education and apprenticeship programs, as well as communication within the vocational education system (item 68) represented barriers to linkage (although VE administrators and local VE personnel were somewhat more likely than BAT representatives and apprenticeship personnel to agree with each of these items). VE administrators were significantly more likely than local apprenticeship personnel to agree that the process for selecting apprentices represents a potential barrier to linkage (item 61). VE administrators were significantly more likely than BAT representatives to disagree that the type of student who completes vocational education presents a barrier to linkage (item 64). Both BAT representatives and apprenticeship personnel were significantly more likely to disagree that communication between the Bureau of Apprenticeship and apprenticeship personnel is problematic (item 71). Also, both BAT representatives and apprenticeship personnel were significantly more likely than VE administrators and VE personnel to disagree that apprenticeship committees (item 76), apprenticeship instructors (item 77),

and the Bureau of Apprenticeship (item 79) existed as barriers to linkage activities.

In summary, responses to these items indicate that agency personnel in all four groups perceive the lack of communication, understanding, and awareness between organizations to be the primary barriers to establishing linkage systems between vocational education and apprenticeship programs. In addition, guidance counselors or occupational specialists were generally seen by respondents as barriers to linkage, thereby confirming the notion that the ability level and quality of students in vocational education is a problem and that screening efforts by counselors and other VE personnel to include more able students would facilitate the process of linkage. Both administrative and local level apprenticeship personnel have also expressed a relative discontent with the structure and format of vocational education as it currently exists and have indicated a greater need for cooperative planning of vocational education curriculum.

According to responses given on items 80 to 86, most of the respondents agreed that lack of awareness and communication represented the factor most likely to create barriers to linking vocational education and apprenticeship programs. However, BAT representatives felt that the issue of advanced credit for previous vocational training was the foremost obstacle (VE administrators also cited this item as the second factor most likely to create a barrier). Apprenticeship administrators and personnel were also concerned about the quality and type of student in vocational education. For VE respondents,

vocational education instruction was the least problematic factor, while among apprenticeship respondents, the apprenticeship selection process and the characteristics of personnel in the agencies were seen as relatively unimportant.

Table 16

Number and Percentage of Respondents in Agreement with Statements Identifying Possible Barriers to Linkage According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
Potential barriers to the linking of vocational education and registered apprenticeship programs:				
61. the process for selecting apprentices.	8 (89%)	4 (44%)	29 (63%)	11 (26%)
62. the administrative relationship which presently exists between registered apprenticeship programs and vocational education.	5 (56%)	8 (89%)	24 (52%)	19 (45%)
63. the type of instruction currently received in vocational education.	1 (11%)	7 (78%)	7 (15%)	26 (62%)
64. the type of student who completes vocational education.	2 (22%)	5 (56%)	15 (33%)	26 (62%)
65. the issue of advanced credit in apprenticeships.	6 (67%)	8 (89%)	29 (63%)	17 (40%)
66. the understanding that vocational education has of apprenticeship and the understanding apprenticeship has for vocational education.	7 (78%)	6 (67%)	35 (76%)	28 (67%)
67. communication between vocational education and apprenticeship programs.	9 (100%)	6 (67%)	37 (80%)	26 (62%)

Table 16 - continued

Number and Percentage of Respondents in Agreement with Statements Identifying Possible Barriers to Linkage According to Agency Group

Survey Item		VE Administrator	BAT	Local VE	Apprentice-ship
68.	communication within particular school systems or vocational technical seetings.	9 (100%)	5 (56%)	36 (80%)	27 (64%)
69.	communication by apprenticeship personnel within apprenticeship programs.	7 (78%)	4 (44%)	23 (50%)	17 (40%)
70.	communication between the Bureau of Apprenticeship and vocational education personnel.	6 (67%)	4 (44%)	32 (70%)	16 (38%)
71.	communication between the Bureau of Apprenticeship and apprenticeship personnel.	1 (11%)	1 (11%)	16 (35%)	7 (17%)
72.	vocational education directors.	3 (33%)	3 (38%)	18 (39%)	15 (38%)
73.	vocational education instructors.	2 (22%)	5 (56%)	15 (33%)	20 (48%)
74.	vocational education students.	0 (0)	4 (44%)	13 (28%)	14 (33%)
75.	vocational education guidance counselors or occupational specialists.	4 (44%)	6 (67%)	25 (54%)	26 (62%)
76.	apprenticeship committees.	7 (78%)	5 (56%)	24 (53%)	8 (20%)
77.	apprenticeship instructors.	4 (44%)	3 (33%)	14 (30%)	5 (12%)

Table 16 - continued

Number and Percentage of Respondents in Agreement with Statements Identifying Possible Barriers to Linkage According to Agency Group

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship
78. industry.	3 (33%)	5 (56%)	18 (39%)	11 (26%)
79. the Bureau of Apprenticeship	3 (33%)	2 (22%)	16 (35%)	6 (14%)

Table 17

Mean Response Scores, F-Ratios and Significance Levels for Statements Identifying Possible Barriers to Linkage According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
Potential barriers to the linking of vocational education and registered apprenticeship programs:						
61. the process for selecting apprentices.	2.00	3.00	2.37	3.38	10.58	p>.01
62. the administrative relationship which presently exists between registered apprenticeship programs and vocational education.	2.33	2.11	2.61	2.71	.99	p=.40
63. the type of instruction currently received in vocational education.	3.89	2.11	3.65	2.45	17.62	p>.01
64. the type of student who completes vocational education.	3.78	2.44	3.33	2.57	6.20	p>.01
65. the issue of advanced credit in apprenticeships.	2.11	2.00	2.48	2.86	2.50	p=.06
66. the understanding that vocational education has of apprenticeship and the understanding apprenticeship has for vocational education.	2.00	2.33	2.13	2.40	1.03	p=.38
67. communication between vocational education and apprenticeship programs.	1.78	2.56	2.17	2.43	2.06	p=.11
68. communication within particular school systems or vocational technical settings.	1.78	2.56	2.20	2.31	1.53	p=.21

Table 17 - continued

Mean Response Scores, F-Ratios and Significance Levels for Statements Identifying Possible Barriers to Linkage According to Agency Group*

Survey Item	VE Administrator	BAT	Local VE	Apprentice-ship	F-Ratio	Significance Level
69. communication by apprenticeship personnel within apprenticeship programs.	2.00	3.11	2.59	3.00	4.08	p=.01
70. communication between the Bureau of Apprenticeship and vocational education personnel.	2.67	3.11	2.26	2.81	3.22	p=.03
71. communication between the Bureau of Apprenticeship and apprentice-ship personnel.	3.00	4.00	2.76	3.57	10.60	p>.01
72. vocational education directors.	3.00	3.12	3.11	2.85	.46	p=.71
73. vocational education instructors.	3.22	2.89	3.11	2.69	1.44	p=.23
74. vocational education students.	3.44	2.89	3.20	2.93	1.16	p=.33
75. vocational education guidance counselors or occupational specialists.	2.56	2.44	2.52	2.29	.40	p=.75
76. apprenticeship committees.	2.11	3.00	2.53	3.49	10.00	p>.01
77. apprenticeship instructors.	2.56	3.33	3.02	3.64	5.45	p>.01
78. industry.	3.00	2.89	2.85	3.36	1.84	p=.15
79. the Bureau of Apprenticeship.	2.67	3.89	2.70	3.60	10.21	p>.01

* Response range is from 1 to 5. Average response $\leq$ 2.5 indicates agreement, while average response $\geq$ 3.5 indicates disagreement with survey items.

Conclusions

Barriers to linkage, as perceived by respondents to the present survey, both confirmed and documented the conclusions evident in the literature. The same held true for perceptions concerning potential facilitators to linkage, with most of the responses clustering under two or three of the categories cited in the literature review.

The results of the questionnaire contributed information regarding priorities for effecting successful linkage arrangements and suggested efficient, effective, and attainable mechanisms for addressing potential sources of conflict. Some of the barriers cited by respondents can be summarized as follows:

(1) Existing organizational practices and procedures. In particular, vocational education personnel expressed concern over existing procedures used in selecting apprentices.

(2) Lack of domain consensus. Both representatives from the Bureau of Apprenticeship and Training and vocational education administrators indicated concern over a lack of consensus regarding mutual decision-making activities and long-range goal planning.

(3) Personnel attitudes and perceptions. According to the survey results, vocational education personnel were perceived to be more resistant to change than were apprenticeship personnel.

(4) Lack of communication and awareness. This was an area which seemed to receive almost unanimous response. It was felt, by a large percentage of respondents in all agency categories, that insufficient knowledge about each agency's operations and program planning was a major source of difficulty in establishing successful linkage arrangements between vocational education and apprenticeship programs.

Banathy and Duwe (1978), suggest that minor conflicts will often serve as a catalyst to opening lines of communication between linkage partners. In the event where planning is insufficient beforehand, problematic situations can provide a forum for more systematic attempts to resolve potential barriers before they arise. Thus, underlying conflicts can be constructively transformed into a dynamic tool for establishing domain consensus.

According to the present survey results, a lack of communication and awareness was perceived to be the factor most likely to create barriers hindering linkage activities between vocational education and apprenticeship programs. The need for improved communications includes not only the necessity for a quantitative increase in the amount of relevant information exchanged between the two programs, but also the expansion of the communication network to include other relevant parties. For example, a large percentage of respondents felt it was important to increase the accessibility of information concerning apprenticeship programs to parents of vocational education students. In addition,

many respondents felt a greater need for the solicitation of inputs and ideas from industry on the part of vocational education program planners.

The problems associated with limited communication and awareness also emphasize the types of concerns which pre-linkage activities should address. For example, pre-linkage planning activities could be directed toward facilitating consensus with regard to the rights and responsibilities accorded to each agency involved in the linkage relationship. In the case of developing cooperative associations between vocational education and registered apprenticeship programs, specific issues to be addressed include: the granting of advanced credit for previous vocational training, vocational entry requirements and standards, and the issue of whether apprenticeship training should be made mandatory. While it may not be possible or even necessary to completely resolve each of these issues immediately, the existence and implications of each potentially problematic situation should at least be explored in an open manner.

Pre-linkage planning should also be concerned with the availability and dissemination of relevant information and data which each agency will need from the other. Survey results indicated that feedback from apprenticeship organizations on vocational education students who become apprentices and information on the categories of workers needed in industry and business are important considerations for vocational education administrators and personnel. Undoubtedly, there are other areas where critical information or communication gaps exist and which should there-

fore receive focused attention, even before actual linkage activities are implemented.

Survey respondents have also identified certain personnel positions which are potential sources of conflict in achieving successful collaboration between vocational education and apprenticeship programs. Pre-linkage planning could therefore be addressed to the development of procedures for resolving erroneous perceptions and providing personnel in these positions with more accurate information.

Both vocational education and apprenticeship administrators and personnel, however, must have some interest in the resolution of these issues and must therefore perceive some tangible benefits that would accrue to their respective organizations as a result of these activities. This has been referred to in the literature as "incentive to collaboration" (Maurice, 1982). A recurrent theme is summed up in the observation that the primary motivation for establishing any type of voluntary linkage is based on the limitations or inability of both organizations to accomplish mutually-desired goals independently (Maurice, 1982). Thus, it is vital for planners to establish a clear understanding of the potential costs and benefits incumbent upon the organizations involved in linkage activities.

Although the differences were not large, there were several divergences of opinion between administrative and local level personnel within the same program. For example, apprenticeship personnel and BAT representatives were divided with regard to the issues surrounding

the quality of vocational instruction. The latter perceived the quality of instruction to be a significant barrier to linkage, while local level personnel were not as likely to feel a deficiency in vocational training. BAT representatives were also more likely than apprenticeship personnel to feel that advanced credit should not be granted in apprenticeship programs for training previously received in vocational education.

In general, the findings of the present study confirm what are identified in the literature as necessary factors in the activitation of successful linkage relationships. These factors are seen by respondents as having an interconnectedness which supports the idea that it is necessary to view the entire linkage process as a system. When viewed from a systems perspective, the roles of those personnel who have been referred to in the literature as "boundary personnel" (i.e., those who normatively preserve and define the boundaries of a given organization within the context of a larger social, political, and economic setting) assume a more profound significance in planning and coordinating linkage activities (Banathy and Duwe, 1978); Esterline, 1976).

Although the questionnaire did not address the issue of whether or not respondents perceived linkage between vocational education and apprenticeship programs to be immediately beneficial at the present time, the findings did provide enough information to predict areas of agreement between the two agencies in the event coordination efforts were to take place. These include:

(1) Increased planning inputs from industry in developing vocational education curriculum, and more consistent feedback from apprenticeship committees on the progress of vocational education students accepted into apprenticeship programs.

(2) Increased mutual decision-making, especially with regard to the allocation and distribution of funds earned through apprenticeship instruction.

(3) Joint development of more comprehensive pre-apprenticeship programs by vocational education and apprenticeship committees.

In conclusion, the findings indicate that certain courses of action should be pursued if linkage arrangements are to be sustained over a long period of time and are not just undertaken in an ad hoc manner. These courses of action may involve not only various changes in the allocation of administrative costs, but also modifications in policies, procedural goals, and even changes in the organizational structures. These changes will be most beneficial if applied to the following issues:

(1) The perceptions among apprenticeship personnel concerning the need to raise entry standards for vocational education.

(2) The suggestion made by apprenticeship personnel and BAT representatives that apprenticeship program completion be made mandatory for all vocational education students.

(3) The feeling expressed by vocational education personnel that existing processes for selecting apprentices erect more barriers than opportunities for vocational students attempting to enter apprenticeship programs.

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Alachua	II	Martin	V
Baker	II	Monroe	V
Bay	I	Nassau	II
Bradford	II	Okaloosa	I
Brevard	III	Okeechobee	V
Broward	V	Orange	III
Calhoun	I	Osceola	III
Charlotte	IV	Palm Beach	V
Citrus	III	Pasco	IV
Clay	II	Pinellas	IV
Collier	V	Polk	IV
Columbia	II	Putnam	II
Dade	V	St. Johns	II
DeSoto	IV	St. Lucie	V
Dixie	II	Santa Rosa	I
Duval	II	Sarasota	IV
Escambia	I	Seminole	III
Flagler	III	Sumter	III
Franklin	I	Suwanee	II
Gadsden	I	Taylor	I
Gilchrist	II	Union	II
Glades	V	Volusia	III
Gulf	I	Wakulla	I
Hamilton	II	Walton	I
Hardee	IV	Washington	I
Hendry	V		
Hernando	III		
Highlands	IV		
Hillsborough	IV		
Holmes	I		
Indian River	V		
Jackson	I		
Jefferson	I		
Lafayette	II		
Lake	III		
Lee	IV		
Leon	I		
Levy	II		
Liberty	I		
Madison	II		
Manatee	IV		
Marion	III		

VOCATIONAL EDUCATION

REGIONS

BY

COUNTIES

APPENDIX A: THE FIVE VE REGIONS

Appendix B

Counties Included in the Seven Apprenticeship Regions

Region 1:

Calhoun	Gulf	Leon	Taylor
Franklin	Jackson	Liberty	Wakulla
Gadsden	Jefferson	Madison	

Region 2:

Alachua	Columbia	Lafayette	St. Johns
Baker	Dixie	Levy	Suwannee
Bradford	Duval	Marion	Union
Citrus	Gilchrist	Nassau	
Clay	Hamilton	Putnam	

Region 3:

Brevard	Lake	Osceola	Sumter
Flagler	Okeechobee	St. Lucie	Volusia
Indian River	Orange	Seminole	

Region 4:

DeSoto	Hillsborough	Pasco	Sarasota
Hardee	Manatee	Pinellas	
Hernando	Pasco	Polk	

Region 5:

Broward
Dade
Martin
Monroe
Palm Beach

Region 6:

Charlotte
Collier
Glades
Hendry
Lee

Region 7:

Escambia
Holmes
Okaloosa
Santa Rosa
Walton
Washington

APPENDIX C:

Interview Schedule

Date:_____ Interviewer:_____

Time: (Start)_____(Finish)_____

Person Interviewed:_____

Organization:_____

Phone #:_____

Location:_____

Additional Information:_____

_____

_____

_____

Introduction

Hello(_their name_), my name is(_____) I am calling from Florida State University where I am currently working on a funded research project, sponsored by the state of Florida. The purpose of the project is to investigate vocational education programs and apprenticeship programs and to determine the possibility of their associating more closely with one another.

Could you spare sometime for an interview? I would like to ask you some questions about your organization and (the other organization). Your answers will be valuable to us and help us to complete our project. I assure you that your responses will remain anonymous.

Questions

	Barriers	Facilitators
1) In your opinion, what are the primary functions of Registered Apprenticeship Programs (RAP)/Vocational Education (VE) - (their Organization		
2) In your opinion, what are the primary functions of VE/RAP -(the other organization)?		
3) Are there similarities between the functions of VE and RAP? ___Yes ___No If YES, what are they?		
4) Are there differences between the functions of VE and RAP? ___Yes ___No If YES, what are they?		

	Barriers	Facilitators
5) Do you think these similarities and differences create any barriers to developing a closer relationship between VE and RAP? ___Yes ___No If YES, what are those barriers?		
6) Are there similarities between the completed VE student and the beginning apprentice? ___Yes __No If YES, what are they?		
7) Are there differences between the completed VE student and the beginning apprentice? ___Yes ___No If YES, what are they?		
8) Do you think these similarities and differences create any barriers to developing closer ties between VE and RAP? ___Yes ___No If YES, what are those barriers?		

	Barriers	Facilitators
9) Is there a working relationship between RAP and VE at the present time? ___Yes ___No If YES, how would you describe the relationship? _____ _____ _____ _____ _____ _____		
10) What may be preventing the organizations from establishing closer ties? _____ _____ _____ _____ _____ _____		
11) How similar are vocational education training and apprentice training? _____ _____ _____ _____ _____ _____		
12) How dissimilar are vocational education training and apprentice training? _____ _____ _____ _____ _____ _____		

	Barriers	Facilitators
13) Would the similarities and dissimilarities of the two groups create barriers to creating a closer working relationship? ___Yes ___No If YES, what are the barriers?		
14) A - From your prospective, is there a need for (the orther organization)? ___Yes ___No If not, why not?		
If YES, how are they needed?		
B - What does (the other organization) now have, or what could they do that would be beneficial to your organization or program?		
15) A- What are your feelings regarding "Advanced Credit" in RAP for training received in VE?		

	Barriers	Facilitators
15) B - (Probe to uncover the underlying issues if advanced credit.)		
16) A - How can the organizations become more closely associated?		
B - Specifically, what can (the other organization do to facilitate linkage? What can VE and RAP do collectively that they could not do independently?		
C - Can these changes you have named be made or are there barriers preventing these changes? ___Yes ___No If YES, what are the barriers?		
17) Who are the decision makeres in each organization who can iniate, sanction, or veto linking activities?		

Closing

It seems that you have identified the following barriers which can obstruct the linking of vocational education and apprenticeship programs.

I'll read them to you. Tell me, if you agree that they are barriers.

(Name the barriers)

I would like you to do one final thing. Please suggest what can be done to overcome each barrier.

(Name the barrier)

APPENDIX D:

SURVEY TO IDENTIFY BARRIERS AND FACILITATORS ASSOCIATED

WITH LINKING VOCATIONAL EDUCATION

AND REGISTERED APPRENTICESHIP PROGRAMS

Please report the following demographic information so that your survey responses may be appropriately analyzed).

NAME:_____

POSITION: (Please indicate and briefly describe your position as it relates to either vocational education or apprenticeship programs.

_____

_____

_____

_____

EMPLOYER:_____

COUNTY:_____

If appropriate, indicate whether your apprenticeship program is:

Joint_____ Non-joint_____

This survey provides you wih an opportunity to express your opinions about vocational education; registered apprenticeship programs; and barriers and facilitators associated with linking the organizations for the purpose of assisting personnel in apprenticship programs and vocational education accomplish their respective goals more effeciently.

On the following pages you will find a series of statements regarding aspects of registered apprenticeship programs and vocational education. You are asked to express your opinion regarding each statement by indicating the degree to which you agree or disagree.

There are no right or wrong answers, so do not hesitate to respond to each statement exactly the way you feel. Again, we remind you that your responses will remain confidential. Finally, be aware that these statements do not necessarily reflect the opinions of the project staff.

(CONTINUE ON BACK)

Directions for marking your responses for Sections 1 - 8.

A. In making your responses circle 1,2,3,4,5 as below:

(1) Strongly Agree, (2) Agree, (3) Neutral, (4) Disagree,

(5) Strongly Disagree

B. When selecting your responses, consider the response words as if they were points on the same straight line;

Strongly Agree	Agree	Neutral	Dis-Agree	Strongly Disagree
1	2	3	4	5

C. Below are sample statements with responses shown.

	SA	A	N	D	SD
1. The Yankees are the best team in baseball	(1)	2	3	4	5
2. Henry Aaron's homerun record will stand for all time.	1	2	3	(4)	5

D. PLEASE DO NOT OMIT ANY ITEMS!

Section One includes statements concerning the process for selecting apprentices.

Code: Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) Strongly Disagree (SD)

The process of selecting registered apprentices:	SA	A	N	D	SD
1. favors those who have a friend or relative in the trades.	1	2	3	4	5
2. is often not communicated to the vocational education student.	1	2	3	4	5
3. is often conducted at a time of the year that requires high school graduates to wait for nearly a year after graduation before they can apply.	1	2	3	4	5
4. affords no preference for prior training in vocational education.	1	2	3	4	5
5. provides a way for keeping the labor market narrow.	1	2	3	4	5
6. limits the entry of younger applicants.	1	2	3	4	5
7. is affected by the economy and the job market.	1	2	3	4	5

(CONTINUE ON BACK)

Section Two concerns the administrative relationship between registered apprenticeship programs and vocational education.

The exchange of monies and services between registered apprenticeship programs and vocational education is a barrier to these groups having a close working relationship because of:	SA	A	N	D	SD
8. the procedures used by vocational education to select and certify apprenticeship instructors.	1	2	3	4	5
9. the way vocational education distributes funds earned through apprenticeship instruction.	1	2	3	4	5
10. a lack of awareness by apprenticeship personnel concerning funding of vocational programs for apprentices.	1	2	3	4	5
11. problems concerning the allotment and use of materials for apprenticeship classes in vocational facilities.	1	2	3	4	5

Section Three concerns instruction in vocational education.

Instruction in vocational education:	SA	A	N	D	SD
12. develops only general work skills.	1	2	3	4	5
13. is outdated theoretically.	1	2	3	4	5
14. is limited by outdated equipment.	1	2	3	4	5
15. employs instructors with little practical experience.	1	2	3	4	5
16. is largely theoretical as opposed to "hands on."	1	2	3	4	5
17. cannot prepare a student for job entry, but prepares students to be trained helpers.	1	2	3	4	5
18. prepares students for non-existent jobs.	1	2	3	4	5

Instruction in vocational education:	SA	A	N	D	SD
19. leaves its students with the impression that they are qualified for jobs for which they are not.	1	2	3	4	5
20. prepares students for work, thereby making apprenticeship unnecessary.	1	2	3	4	5
21. includes students who are often immature and would therefore not make good apprentices.	1	2	3	4	5
22. includes students who are low in scholastic ability and would, therefore, not make good apprentices.	1	2	3	4	5

Section Four concerns the issue of "Advanced Credit" or "Advanced Standing" in apprenticeship programs for training received in vocational education.

The granting of advanced credit in apprenticeship programs for training received in vocational education is an issue because:	SA	A	N	D	SD
23. contractors can't afford it.	1	2	3	4	5
24. industry personnel want to make their own decisions regarding credit.	1	2	3	4	5
25. apprenticeship committees do not want to give credit for training based on theory rather than practical experience.	1	2	3	4	5
26. apprenticeship committees prefer the untrained applicant who can be taught their way.	1	2	3	4	5
27. credit should only be given for past work experience, (rather than related training) which can facilitate present job productivity as an apprentice.	1	2	3	4	5
28. apprenticeship committees would prefer not to give credit because it is more cost effective to have an apprentice indentured for the maximum tenure.	1	2	3	4	5
29. a year in vocational education is not worth a year as an apprentice.	1	2	3	4	5

(CONTINUE ON BACK)

Section Five deals with the combined issues of awareness and communication between and throughout both organizations.

		SA	A	N	D	SD
30.	vocational educators lack understanding of apprenticeship programs.	1	2	3	4	5
31.	apprenticeship committees lack understanding of vocational education.	1	2	3	4	5
32.	vocational educators do not communicate with industry regarding curriculum planning.	1	2	3	4	5
33.	there is a lack of communication among vocational educators regarding apprenticeship programs.	1	2	3	4	5
34.	there is a lack of communication among vocational educators concerning apprenticeships.	1	2	3	4	5
35.	apprenticeship personnel fail to conduct awareness activities for vocational education staff and students.	1	2	3	4	5
36.	there is a lack of communication between vocational education and the Bureau of Apprenticeship regarding apprenticeship programs.	1	2	3	4	5
37.	there is a lack of communication between apprenticeship committees and the Bureau of Apprenticeship regarding vocational education.	1	2	3	4	5

Section Six concerns characteristics of apprenticeship programs and vocational education.

		SA	S	N	D	SD
38.	vocational education personnel like to remain independent of the influence of apprenticeship personnel.	1	2	3	4	5
39.	apprenticeship personnel like to remain independent of the influence of vocational education.	1	2	3	4	5
40.	vocational education personnel are resistant to change.	1	2	3	4	5

		SA	A	N	D	SD
41.	apprenticeship personnel are resistant to change.	1	2	3	4	5
42.	vocational educators try to exert too much control on apprenticeship programs.	1	2	3	4	5
43.	apprenticeship personnel try to exert too much control on vocational education.	1	2	3	4	5
44.	the relationship between joint and non-joint apprenticeship programs creates a barrier for linking vocational education and apprenticeship programs.	1	2	3	4	5
45.	apprenticehip personnel intentionally limit apprenticeship completions in order to limit the supply of trained workers.	1	2	3	4	5
46.	joint apprenticeship committees are influenced by traditions which may hinder cooperative relationships with vocational education.	1	2	3	4	5
47.	guidance counselors steer the "better" students away from vocational education.	1	2	3	4	5
48.	the Bureau of Apprenticeship and Training is essential for developing and/or maintaining a positive relationship between vocational education and apprenticeship programs.	1	2	3	4	5

(CONTINUE ON BACK)

Section Seven some possible facilitators for the linking of vocational education and registered apprenticeship programs.

It would be beneficial if:	SA	A	N	D	SD
49. vocational education were to raise its entry standards and only admit the more competent students.	1	2	3	4	5
50. graduating vocational education students were better prepared in the basic skills.	1	2	3	4	5
51. apprenticeship committees would make parents of vocational education students aware of apprenticeship opportunities.	1	2	3	4	5
52. vocational educators were more aware of apprenticeship programs, and the kind of workers needed in industry.	1	2	3	4	5
53. the Bureau of Apprenticeship would assume responsibility in establishing closer ties between vocational education and apprenticeship programs.	1	2	3	4	5
54. apprenticeship programs were made mandatory.	1	2	3	4	5
55. a greater variety of apprenticeship programs were established.	1	2	3	4	5
56. apprentices' entry level could be clearly identified, thereby assuring appropriate placement in the apprenticeship program.	1	2	3	4	5
57. more pre-apprenticeship programs were jointly developed by vocational education and apprenticeship committees.	1	2	3	4	5
58. apprenticeship committee members were on vocational education and apprenticeship committees.	1	2	3	4	4
59. apprenticeship committees provided feedback to vocational education concerning the progress of vocational education students who became apprentices.	1	2	3	4	5

It would be beneficial if:	SA	A	N	D	SD
60. vocational educators would more often solicit ideas and input from industry concerning current needs, trends, and equipment.	1	2	3	4	5

Section Eight identifies possible barriers to the linking of vocational education and registered apprenticeship programs.

Indicate the degree to which you agree or disagree that each of the following represents a barrier to linking vocational education and apprenticeship programs.	SA	A	N	D	SD
61. the process for selecting apprentices.	1	2	3	4	5
62. the administrative relationship which presently exists between registered apprenticeship programs and vocational education.	1	2	3	4	5
63. the type of instruction currently received in vocational education.	1	2	3	4	5
64. the type of student who completes vocational education.	1	2	3	4	5
65. the issue of advanced credit in apprenticeships.	1	2	3	4	5
66. the understandingthat vocational education has of apprenticeship and the understanding apprenticeship has for vocational education.	1	2	3	4	5
67. communication between vocational education and apprenticeship programs.	1	2	3	4	5
68. communication within particular school systems or vocational technical settings.	1	2	3	4	5
69. communication by apprenticeship personnel within apprenticeship programs.	1	2	3	4	5
70. communication between the Bureau of Apprenticeship and vocational education personnel.	1	2	3	4	5

(CONTINUE ON BACK)

Indicate the degree to which you agree or disagree that each of the following represents a barrier to linking vocational education and apprenticeship programs.	SA	A	N	D	SD
71. communication between the Bureau of Apprenticeship and apprenticeship personnel.	1	2	3	4	5
72. vocational education directors.	1	2	3	4	5
73. vocational education instructors.	1	2	3	4	5
74. vocational education students.	1	2	3	4	5
75. vocational education guidance counselors or occupational specialists.	1	2	3	4	5
76. apprenticeship committees.	1	2	3	4	5
77. apprenticeship instructors.	1	2	3	4	5
78. industry.	1	2	3	4	5
79. the Bureau of Apprenticeship.	1	2	3	4	5

Section Nine. Rank the following seven (7) statements (numbers 80 to 86) in order (1 through 7) of their potential for creating barriers to linking vocational education and apprenticeship.

No. 1 represents the factor most likely to create a barrier

and

No. 7 represents the factor least likely to create a barrier

80. ___the type of student in vocational education.

81. ___awareness and communication between the organizations.

82. ___vocational education instruction.

83. ___the present administrative relationship.

84. ___the apprenticeship selection process.

85. ___advanced credit.

86. ___the personal and/or professional characteristics of the personnel in the agencies.

Section Ten Please respond to the two final questions.

87. Specifically, what do you feel is the greatest barrier to linkage between vocational education and apprenticeship programs?

_____

_____

_____

_____

_____

_____

88. Ideally, what could be done to overcome the barrier just described?

_____

_____

_____

_____

_____

_____

College of Education
Department of Educational Leadership
Vocational Education
115 Stone Building
(904) 644-6298

The Florida State University
Tallahassee, Florida 32306

Your assistance is needed in order to complete a state sponsored research project which is funded by the Board of Regents. The project investigates the characteristics of vocational education and registered apprenticeship programs to determine the possibility of their associating more closely with one another, in regard to preparing people for work. Specifically, we are interested in determining both the barriers which many inhibit this relationship, and the facilitators which may serve to overcome or to prevent the barriers. We will use this information to imporve current relations between vocational education and registered apprenticeship programs. Our objective, then, is to establish. state and local linkage between registered apprenticeship programs and vocational education that will foster a cooperative effort by the organizations to train prospective workers. Talmadge L. Rushing, of the Division of Vocational Education and Richard V. McCauley, of the Bureau of Apprenticeship have worked closely with us on the project, and have supported our efforts.

You can assist us by taking a few minutes to complete and return our survey. Your responses will be summarized with those of other respondents associated with registered apprenticeship programs and vocational education. Your responses will remain confidential. (We request your name and other demographic information only to facilitate data analysis).

We ask that you return the completed survey in the enclosed stamped envelope. Before mailing, however, please check to see that you have responded to all items on the survey. We intend to summarize the survey data beginning April 30, 1982. We therefore request that you return your completed survey no later than April 25, 1982.

If you have any questions concerning the project or the survey, please call us at (904) 644-6298, (Suncom 285-6298).

We look forward to your cooperation.

Sincerely,

Hollie B. Thomas
Project Director

Kenneth A. Kiewra
Janice Tice
Research Assistants

/jks

Enclosure